MODEL AIRPLANE NEWS

IN THIS ISSUE

Dumbo! Catalina!

UC Model Drawing

Men and Ships—The Story of Bell's X-1.

SEPTE

"I Promise You MORE POWER"

If You Will Try My Secret Formula Fuel"

LUBRICATED WITH 3 TYPES OF DEGUMMED TREATED CASTOR OILS

My name is Wallace Francisco. Users of the fuel I produce have WON MORE WORLD SPEED RECORDS than buyers of all other brands of processed fuels combined. I take producing fuel very seriously.

You see—we don't just throw a few ingredients in a tank, stir it up and pour it in a can. Our fuels are as carefully and scientifically formulated as a doctor's prescription. Actually 16 different ingredients are used in FRANCISCO NITROL... and the formula is a closely guarded secret.

Not only that, we use Castor Oils as the lubricant—from which the gummy and other undesirable qualities have been removed. This avoids gumming up your engine... as happens with plain castor oils or synthetics.

Our fuels are also processed to avoid spoilage. Undesirable impurities are removed to prevent rust – rust that aids in the destruction of engine parts. Our fuels are ACCLIMATIZED to operate efficiently in all weather conditions.

If you're a serious hobbyist... want to win... want to protect your engine from wearing out and gumming up after a brief flash of power, take my word for it. Buy and try a can or two of FRANCISCO NITROL at your dealer ... and discover the huge difference. *There is no equal.* "I promise you more power – and sustained power!" ***$100,000 for an equal!***

FRANCISCO LABORATORIES

3015 Glendale Boulevard, Los Angeles 39, California

GET ON OUR MAILING LIST!

Mail coupon attached and I will include you on our mailing list of bulletins giving latest data and information on fuel, performance records, etc. IF YOU ALSO INCLUDE 25¢ (coin or stamps) we'll send a kit of literature about FUELS and 6 types of degummed-treated Castor Oils, our booklet "CONTEST FUEL at it's Best," and other helpful information.

FRANCISCO LABORATORIES
3015 Glendale Blvd., Los Angeles 39, Cal.

☐ Put me on your free mailing list.

☐ Enclosed find 25¢ for Literature Kit and one year's mailing information.

Name_____

Address_____

City_____ Zone____ State_____

Whee! Look at 'em Fly!

Control handle and lines included on all Ready-to-Fly Models

They're SKY-HIGH in Design, Flyability and Value!

COMMENDED BY THE CONSUMER SERVICE BUREAU OF PARENTS' MAGAZINE

Comet

Ready-to-Fly

U-Control ALL-PLASTIC GAS MODELS

What a picture they make—Comet's 4 big-'n-beautiful Ready-to-Fly U-Control Gas Models zooming through the sky—while their youthful "pilots" get the thrill of their lives putting them through their paces! These all-plastic beauties were **deliberately designed** to **out-fly, out-value** and **out-sell** them all—and they're doing just that! Young Americans want **action** these days—and they **get it** in Comet's Ready-to-Fly Gas Models. Stunningly packaged in richly color-printed chests—complete with powerful "OK" Cub fast-starting engines, control handles and lines—and they cover every popular price range from $7.95 to $14.95!

Upper left: True-to-Scale **PIPER TRI-PACER**, 11⅝" long—**PLM-30—$7.95**; Upper right: True-to-Scale **MUSTANG F-51**, 13¹⁵⁄₁₆" long—**PLM-45—$12.95**; Center: the magnificent **STARFIGHTER**, 19¹⁵⁄₁₆" long—**PLM-46—$14.95**; Lower left: swept-wing **SABRE 44**, 14½" long—**PLM-44—$9.95**.

COMET MODEL HOBBYCRAFT, INC.

FREE! for a limited time!
The New 1958 **Comet Catalog**—shows hundreds of models in color—or **20-Page Book**—"What Makes An Airplane Fly"—lots of pictures and diagrams—printed in 2 colors. Write for either book today!

501 W. 35th St., Dept. 98,
Chicago 16, Ill.

GET INTO THE RADIO CONTROLLED

Spirit

IT'S SIMPLE
IT'S EXCITING

HELL RAZOR
½A—$2.00 B—$6.95
A—$6.50 C—$7.50

JUBILEE—$4.50

Now is the time to start having the time of your life. Consolidated's SPIRIT makes "Radio Controlled" simpler yet so much more exciting. This sleek sport and contest flyer gives you knock-off landing gear to take the shocks without breaking equipment. There's a sliding tray for easy access to batteries and receiver plus many more big extras. Comes complete with full size assembly plans and hookup instructions.

"HOW SLEEK" NO MORE OF THAT BULKY R/C LOOK

475 sq. in. in wing area. Span 54". Fuselage 35".

.15 — .23 displacement engine. Interchangeable Motor Mount.

AAA Balsa Throughout

$10.95 less radio, engine and wheels

WOW—$3.50
WOWEE—$1.95

GRUMMAN TBF1 AVENGER-$14.95

MEW-GULL $6.95

BANDIT—$3.50

MANX CAT V—3.50

½ A MODELS—$3.50
STUKA—$3.95
GIANT STUKA—$7.50

AT BETTER DEALERS EVERYWHERE

Consolidated MODEL ENGINEERING CO.
3087 THIRD AVE., NEW YORK 51, N. Y.
CONSOLIDATED MODELS: DESIGNED BETTER—BUILT BETTER—FLY BETTER

Write for illustrated literature

NOW! THRILLING, EXCITING, SPINE-TINGLING ACTION
...Right in Your Own Home, with—

AVIATION MOVIES For 8 & 16mm Projectors

Start immediately, your own library of these action-packed aviation movies. Watch spellbound as the daredevils of the skies take you on a never-to-be-forgotten bombing mission . . . or perform breathtaking and death defying aerial stunts . . . feel the electrifying thrill as you skim along at tree top height for aerial observation. The entire history of aviation, along with the most sensational action shots ever taken, are at your command from this complete library. Show them at club meetings, rallies, schools, socials, etc. Your showings will be in constant demand.

Order from any of the list below . . . or send for FREE LISTING of our complete library.

PRICES

50 Foot Reel, 8mm.....$1.50
200 Foot Reel, 8mm.....$5.00
100 Foot Reel, 16mm.....$3.50
400 Foot Reel, 16mm.....$12.00

ALL ORDERS SENT POSTAGE PAID

☐ **SMOKE STUNTS** (50' 8mm - 100' 16mm)

☐ **AERIAL STUNTS** (200' 8mm - 400' 16mm) 15 minutes of nerve shattering, spine tingling stunts. Daredevils leaping from plane to plane in mid-air, walking on wings of high-flying planes, where one bad move means death—but see for yourself!

☐ **UPSIDE DOWN IN THE AIR** (50' 8mm, 100' 16mm) Experience the exhilarating thrill of flying upside down and the fun and excitement of an aerial circus.

☐ **BOMBING THE ENEMY** (50' 8mm - 100' 16mm) Fly with the air force on an actual bombing raid. Watch the bombs spiral earthward and destroy the enemy.

☐ **DAREDEVILS OF THE AIR** (100' 8mm - 200' 16mm) Thrilling, death defying aerial stunts —where the pilot's skill and split second timing make the difference between life and death.

☐ **FORTY YEARS OF AVIATION** (50' 8mm - 100' 16mm)

☐ **MARCH OF AVIATION** (200' 8mm - 400' 16mm)

☐ **NAVAL AIRCRAFT CARRIER OPERATIONS . . .** In COLOR and BLACK & WHITE
50' 8mm Color.....$3.95
200' 8 mm Color.....$14.95
50' 8mm B&W.....$1.50
200' 8mm B&W.....$14.95
Taken aboard the U.S.S. Yorktown. Actual flight operations of the Navy's fastest jets as they're catapulted into flight—and as they return at high speed to land on the small deck of the carrier with a jolting stop. See dozens of marine helicopters touch down and take off in a continuous stream on the moving deck of the 'Fighting Lady'. Witness the dramatic rescue by a helicopter of a man from the sea.

ADRAN CO. Box 128, Pacoima, California

P. G. F. CHINN

Foreign Notes

► Once upon a time, we used to be able to recite all the most important world model records from memory. Today, world records attract less attention and there is not one modeler in a hundred who knows who holds what.

One reason for this, undoubtedly, is that, nowadays, record claims are made from so many different countries and take some months to be ratified and publicized by the FAI. Often, a claim is lodged with the FAI, only for the claimant to be subsequently informed that the record has already been broken by another modeler from another country. The FAI records list is published annually and, looking through the current official list, corrected as at January 1, 1958, a number of omissions are evident and, seemingly, not all the new records set during 1957 had been ratified by Jan. 1,—a not very satisfactory state of affairs.

The records list includes some 30 different classes, divided between glider, rubber and gas, helicopter-rubber and helicopter-gas, radio-control gas and radio-control glider, plus four classes of speed. There are records for duration, distance and speed in each FF and RC category, except in the case of gliders, where there are no speed classes.

In addition, there are four absolute world records, for duration, distance, height and speed. That fine effort in 1956 by Virgil Cone and Dr. Robert Chase: 8 hr. 34 min. 21 sec., with an RC glider, gives the United States a comfortable position in the first category. The Russians hold the distance and height records with 378.756 km. (235.35 miles) and 5,103 meters (16,942 ft.) made, respectively, by E. Borisjevitch (free-flight gas in 1952) and G. Lubuschin (RC gas in 1957). Hungary's noted Georges Benedek (of airfoil fame) holds the speed record at 281 km./hr. (176.4 mph) made with a model powered by a special pulse-jet designed by Benedek and called the "Aerojet".

Hungary, incidentally, holds more international records than any other country. The score, to the best of our knowledge, at the time of writing is: Hungary 11, USSR 4, USA 3, Belgium 3, Czechoslovakia 2 and Germany 1.

AUSTRALIA

As a result of our announcement, in the May issue, that the Japanese firm of Oishi & Company would distribute many lines formerly handled by O.S., we have been asked by Tony Farnan to point out that these lines will continue to be available through his agency, O.S. Distributors (Australia), who have been appointed sole Australian importers for Oishi also.

Tony Farnan sends us some details of his latest Class I (2.5 c.c.—.15 cu. in.) speed model. Actually, this, like his previous, Australian record-holding model, is a combined effort with Graham Rice. Pan is a moulded fibreglass-resin laminate, with alloy engine blocks and other metal fixtures molded in. Upper shell, wing and stab are balsa but with several coats of polyester resin, which is then cut down smooth to give a really durable, fuel resistant surface.

The complete ship, with O.S. Max-15 motor, ready to fly, weighs only 8¾ oz.

(Continued on page 7)

Guillow's 1914-1918 WAR BIRDS

TRIUMPHS OF MODEL ENGINEERING AND DESIGN

We are justly proud of the loving care and painstaking skill devoted to development of these super-detailed World War I flying models. No finer kits have ever been offered the model builder — no costs have been spared to achieve the ultimate in scale construction — buy one today and see!

KIT 201

THOMAS MORSE SCOUT

American trainer of the World War I era.

KIT 203

NIEUPORT II

First plane flown by Lafayette Escadrille

Balsa flies BETTER

$2.95 each

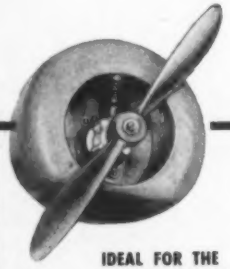
24" wing span

Rubber or Gas Powered Flying Model Kits

KIT 202

BRITISH SE 5A

Best of the British fighters.



IDEAL FOR THE COX .020 ENGINE (ENGINE NOT IN KIT) — PLYWOOD FIREWALL AND INSTRUCTIONS INCLUDED IN KIT.

Guillow-matic kits

THE MODERN WAY TO BUILD AND FLY SCALE MODEL AIRPLANES

The secret? A combination of rugged construction, light weight materials and superior design. Plastic cowls, guns, pilots, wheels, props and radial engines (where required) plus the largest and most complete set of full color decals you ever laid eyes on!

Complete set of full color decals

PAUL K. Guillow INC.,

WAKEFIELD, MASS.

If not available at your Hobby Dealer send direct to factory adding 25c packaging and postage in U.S.A., 40c outside U.S.A.

29th Year of Publication

MODEL AIRPLANE NEWS

M.A.N.

JAY P. CLEVELAND, President and Publisher

SEPTEMBER 1958 Vol. LIX, No. 3

CONTENTS

CONSTRUCTION

Dumbo 9
Bebe-Jodel 23
French Oldtimer 30

ARTICLES

Men and Ships 12
Schneider Trophy Racers 14
5 Hours 29 Minutes 18
Simpl-Simul 22
Faster than Fast 34

FEATURES

Foreign Notes 2
MAN at Work 4
Wayne-Loving Racer 17
Hints 20
Leonings—Pt. 3 26
Radio Control News 28

WILLIAM WINTER, Editor

WITTICH HOLLOWAY, Art Director

Contributing Editors: Peter Chinn (England), Don Grout, Ed Lorenz, Ted Martin, Bruce Wennerstrom, Harry Williamson

Executive and Editorial Office: 551 Fifth Avenue, New York 17, N. Y.

Advertising Manager, N. E. Slane, 551 5th Ave. New York 17; West Coast Adv. Mgr., Justin Hannon, 4708 Crenshaw Blvd. Los Angeles 43, Calif.

Published Monthly by Air Age, Inc. Editorial and Business Offices: 551 Fifth Ave., New York 17, N.Y. Jay P. Cleveland, President; Y. P. Johnson, Vice Pres.; Louis V. DeFrancesco, Treas., G. E. DeFrancesco, Sec. Entered as Second Class Matter at the Post Office at Columbia, Missouri.

Copyright 1958 by Air Age, Inc.
Printed in U. S. A.

by William Winter

► Can a hobby shop cater to model airplane enthusiasts and survive? Jobbers and distributors think not. The Hobby Industry Association advises a well-rounded interest in trains, boats, crafts, and allied hobbies. Had come to believe that the airplane-minded dealer was as dead as the dodo. (Dodo: An overweight free flight whose ground run exceeds runway length.) But raising the roof about the perpetual out-of-whatever-you-need-most par for the course, joyfully discovered some dealers do stress model airplanes without living in poverty.

"My idea was not to handle beads and what-nots," says Jim Preston, of Attica, Ohio, to take one at random, "but to handle a complete line of model airplanes and their accessories. Simple? Far from it!

"My store almost fell by the wayside. It was almost impossible to get co-operation from wholesalers, who believed that 'you can't stay in business without fishing equipment and dime-store novelties.' Even Harvey Swack laughed, although he was the first to admit afterwards that I wasn't crazy.

"Opening day, my stock was small and incomplete. People came by the droves, accepted free gifts, asked 'where are the plastics?' and left without buying. My heart was broken. But weeks later the modelers drifted in, fingered the stock, talked about the good old days and left without buying. What was wrong? The store? Me? No interest in the hobby?"

Preston wasn't a pushover. He acquired a flying field, now open to the public at all times, customers or not, and a small club, the Hobby Butchers with complete work rooms in the basement. Business is excellent and modelers drift in from all over the country. But what was wrong at first?

"A lot of articles have been written about the lack of manufacturers in the balsa line, especially in beginner kits. This is not true," declares Jim. "It is true that these kits are hard to come by only because the retail shops no longer handle them! Most retailers do not build and fly model airplanes. Few take time to teach a small boy the wonders of flight. Many put a quick-sales item in his hands, satisfying the boy at the moment, but doing nothing to make a steady customer out of him. The modern boy does have money in his pockets but I would rather teach a boy how to build a wood model than I would put his ten- (*Continued on page* 61)

NEXT MONTH'S COVER Fleet Biplane

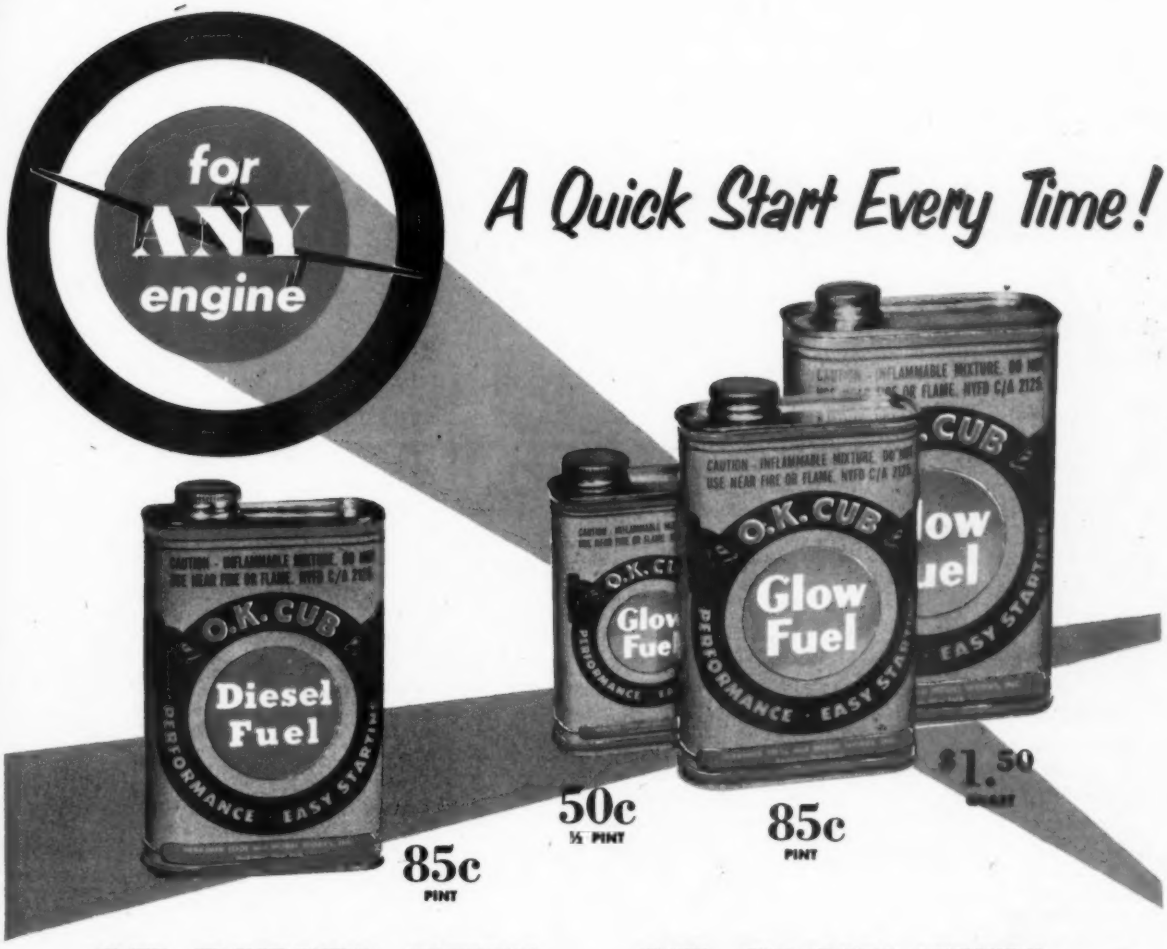
PLANE ON THE COVER

In 1928 the Curtiss-Robertson Airplane Corp., was formed to produce the well-remembered Curtiss Robin, the first version of which (the one on this cover) was powered by the Curtiss OX-5 motor of 90 hp. The OX was war surplus from WW 1. Two passengers sat side-by-side behind the pilot. Span was 41 ft., top speed 99.7 mph.

SUBSCRIPTION PRICES

U.S. & POSSESSIONS: 1 year $3.50; 2 years $5.50; 3 years $7.50
CANADA: 1 year $4.00; ALL OTHER COUNTRIES: 1 year $5.00.
Payment from all countries except Canada must be in U.S. Funds.

CHANGE OF ADDRESS—Send to MODEL AIRPLANE NEWS, SUBSCRIPTION DEPT., 551 FIFTH AVENUE, NEW YORK 17, N.Y. at least one month before the date of the issue with which it is to take effect. Send old address with the new, enclosing if possible your address label or copy. The Post Office will not forward copies unless you provide extra postage. Duplicate issues cannot be sent.



OK DIESEL FUEL

For Diesel Engines

For easy starting and top performance in any weather . . . for long, smooth engine life . . . ask for OK Diesel or Glow Fuels. You'll be delighted with the instant response and sustained power of these fuels in speed, endurance or stunt flights. And you'll like the way they leave your engine after long usage . . . clean, free from varnish or residue, ready to go! That's because the high-powered fuels are blended with high-heat-resistant lubricants that won't thin out under engine heat—nor gum up when the engine cools. For the most fun in flying, ask for OK Diesel or OK Glow Fuel!

OK GLOW FUEL

For All Glow Engines

Here's Everything You Need to Operate an Engine!

OK ACCESSORY SET

Just the right fuel . . . just the right accessories for satisfactory engine operation! Contains:

- ½ pint OK Glow Fuel
- 1 filler spout with plastic tubing
- 1 set battery leads fully assembled and soldered, with battery connection and glow plug clip
- 1 combination plug wrench and screw driver

For Use with All Model Engines

$1.39

Also Recommended for COMET SABRE 44, COMET MUSTANG, A J FIREBABY

20 YEARS OF LEADERSHIP

SEE YOUR DEALER
Or write us direct

HERKIMER TOOL & MODEL WORKS
88 Harter St. Herkimer, N. Y.

ORDER - BY - MAIL FROM THE COMFORT OF YOUR HOME — OUR 27th YEAR OF SERVICE TO MODELERS

SUPERMARKET AHC SHOWCASE

FEATURING AMERICA'S GREATEST MODELS — ORDER YOUR FAVORITES FROM AHC

GLO ENGINES

COX .020 — "Pee Wee" Sensation that flies most ½A planes. 11½" high. Develops max. power at 10,000 RPM. **3.95** COX .049 $4.95

Fox .29 or .35 — Two most popular sizes. Dependable performers. Gives you easy starts easy handling. **15.95 EA.**

K&B .29 or .35 — From K&B Allyn ... a couple of excellent performers. For fun or trophies, they're "Choice of Champs" **15.95 EA.**

McCOY .19, .29 or .35 — We have 'em all ... famous McCoy "Red Heads." We have nothing but "raves" on these engines. **10.00 EA.**

3.95 OK CUB .049A — The hottest ½A engine you can buy ... at a new low price. Push-rear nylon tank, prop & spin starter.

DOOLING .29 — For Modelers who demand the finest. More horsepower per ounce of wt. than any other engine. **23.95**

McCOY "60" — Winner and speed record-holder many years of competition. The ultimate in fine performance! **40.00**

ENGINE TRADE IN SERVICE

We meet all competition! If anyone advertises a higher trade-in allowance in this issue, clip the ad and send it to our N.Y. office with your order. BONUS ITEMS INCLUDED AT NO EXTRA CHARGE. Your old engine is worth 25% of the amount of your purchase. Only 1 engine accepted per order.

Mite Midget $5.95 — 4.95 — Chemical's sensations of ½A engines. Both with Automatic Starters. **O & R .040**

Veco .29 or .35 — Excellent stunt power plants ... very popular with model builders the world over. **15.95 EA.**

Sky Fury Twins — .099 $9.95; .15 $11.95 — Powerful twin engines — low priced. Have power, less weight, new sensations.

JET ENGINES

PAA LOADER $1.98 — The terrific JETEX "100" ... a high performance, solid fuel jet engine. Thrust 1¾ oz. Wt. ¾ oz. Order now.

Jetex 50B — Uses 1 oz. fuel for over 30 sec. of jet propulsion. Economical. **98¢**

DYNAJET "REDHEAD" 35.00 — Holder of all world records for jets. Powerful gas engine develops 4½ Lb. Thrust! Length 21½". Wt. 1¾ ounces.

MARINE ENGINES

Cameron .19 Water Cooled — Popular inboard marine engine that's loaded with power. Single $14.95; Dbl. Act 16.95

Sea Fury OUTBOARD — .049 or .060 — Allyn's sensational outboard's model builder's choice. **10.95 EACH**

FLYING CLOWN $1.95 — From P.D.Q. this popular 28" span profile model. Ideal for sport, stunt or combat flying. .19 to .35 eng.

GOLDEN HAWK 1.95 — Very colorful ½A model from Scientific. Has a big expansive wing. Prefab. carved fuselage.

SMOOTHIE 7.95 — VECO's 52" contest winning stunter. Designed for windy weather. Wingspan 62". For .29 to .35 eng.

SPORT RACER 1.69 — Another Scientific hit with model builders. Has an 18" span, powers with any ½A engine. Ord. from AHC.

DUCTED FAN $4.95 — **"SKYRAY" F4D-1** — A dramatically exciting flyer from Berkeley. Ducted fan model for .049 engines. 25" span. ¾" scale. Prefab.

SKIPPER "29" 2.25 — Popular free flight model from "Mid-west". Wingspan is 29". Powers with .020 to .049 engines. Order it!

AHC HAS EVERYTHING

ORDER FROM THIS MAGAZINE ... OR SEND FOR OUR CATALOG

ONLY AHC GIVES YOU ALL THESE EXTRAS!

1. One year subscriptions to Model Airplane News, Air Trails and Flying Models or their equivalent value to our regular customers.
2. 14-Day Money Back guarantee on unused purchases.
3. BONUS TERMS with every engine ($3.95 or over) purchased. Includes: Correct Size Propeller, Glo Engine Handbook, etc.
4. BONUS ITEMS with Gas Planes (selling at over $1.95) ... includes: Construction Manual, Rubber Wheels, Insignia, etc.
5. IN U.S.A. no postage or packing charges for orders of over $2.00 (include 25c if order is under $2.00). We insure safe delivery ANYWHERE IN THE WORLD. Outside of U.S.A. (except APO & FPO) add 10% for postage (minimum 50c).
6. Membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES. Over 100,000 members!
7. No "minimum" orders. Any order is welcome.
8. Fastest Service in the World! Whether your order is for 5c or $500.00, you get our famous 24 HOUR SERVICE
9. Most complete model stock in America—gas, rubber, solids, etc. If it's advertised, we can usually supply it.
10. Competent understanding of your modeling problems.
11. 64 page giant illustrated catalog FREE with every order.

SATISFACTION GUARANTEED OR YOUR MONEY BACK

DIESEL ENGINES

OK CUB .049 — Herkimer's rugged diesels ... "shock-proof" construction. Excellent performers. **6.95** OK CUB .87L $7.95

ELECTRIC MOTORS

"WONDER" — Electric Motors — Powerful motors — Easy to install. 3 to 6 volt operation.

Boost Drive	$1.45
10-1 Reduction	2.00
16-1 Reduction	2.00
100-1 Reduction	2.50
224-1 Reduction	2.50

U CONTROL

AMERICAN BOY $1.29 — Scientific's profile U-Control trainer for ½A eng. (.020 to .074). 18" span. Ideal for beginners in control line.

ATOMIC $1.95 — Scientific's sensational little team racer for ½A engines. U-Control. All prefab, carved balsa fuselage.

BABY CLOWN (P.D.Q.) 1.50 — Profile, sport 'n stunt flyer for ½A eng. (.020 to .074). 22½" Span. Prefab lit. An excellent performer.

CURTISS P-40F $4.75 — Here's Monarch's deluxe U-Control flyer for engines up to .29. Has a 28" span. Prefab for easy assembly.

FLIGHT STREAK $3.95 — Top Pilot's popular combat or stunt profile flyer for .15 to .35 engines. 42" wingspan. Order from AHC!

P-O-P BEARCAT $5.95 — Berkeley's terrific new ¾" scale model of this WW II fighter. 27" span. For .15 to .29 eng. Top notch performer.

LITTLE RIPS $1.50 — Scientific's big value control line "hips" ... for any ½A engine. A fine performer. Carved fuselage. 16" span.

SPITFIRE $1.95 — Enterprise's scale flyer of this famous fighter. 18" Span. For ½A engines. Prefab. Loads of detail.

STUNT MASTER 1.69 — ½A stunt model from Scientific. It's highly colorful. Powers with ½A engines. Prefab. carved fuselage.

NEW AERO "10" $10.95

R/C AERO 9 $7.95 — From AERO MODELS ... this very super R/C flyer. Designed to withstand shock. 46" span. For .09 to .15 eng.

Breezy Sr. 56" $14.95

BREEZY JR. $6.95 — An unbeatable R/C stunt model from BABCOCK. For ½A Engines, .049 to .09. Span is 42". All prefab kit.

SPECIAL BONUS OFFERS

FREE of extra cost with every **GAS ENGINE** — Bonus items include: Tube of "REV-UP" Lubricant (makes your engine last twice as long!). Ownership Decal. Correct Size Propeller. Glo Engine Handbook. Mounting Nuts & Bolts. Numeral & Alphabet Decals, etc., etc. FREE of extra cost.

FREE of extra charge with **GAS PLANES** selling at $1.95 or over — Bonus items includes: Ownership Decal, Gas Model Construction Manual, Correct Size Rubber Wheels, Insignias, Numeral & Alphabet Decals, etc. FREE at extra cost.

WE MATCH ANY OFFER

AHC matches any offer made by any other advertiser. Attach ANY ad in this issue to your order — and take advantage of the AHC "extras."

ORDER NOW! Get all these AHC "EXTRAS"

LITTLE MUSTANG 1.95 — Here's Scientific's exciting model of the famous ace of fighters. For any ½A eng. 18" span. Carved fuselage.

"Y" SQUARE $2.95 — Sterling's winner of many combat trophies. 36" Span. for .29 to .35 engines. Prefab for easy assembly.

FAIRCHILD PT-19 $6.95 — New Sterling R/C sensation. Pre-shaped inter-notch construction. 48" span. Powers with .09 to .60 engines.

MUSTANG P-51H $9.95 — Big 31" span Jetco model for .19 to .35 eng. Prefab w/shaped fuselage parts, etc. Nats winner '54 to '56.

Thunderbolt P-47N $8.95 — New, sensational scale flying model from Berkeley. 23" Span. for .15 to .29 eng. Order it from AHC, natch!

REDSKIN 5.25 — HENRY ENG. — Another popular model ... the fabulous "Redskin." Terrific sport or team racer. For .19 to .35 eng. 31" span.

"WOW" $3.50 — Exciting different flying model from CONSOLIDATED. 35" Wingspan. Powers with .29 to .35 engines. WOWIE 35 — ½A model $1.25

RINGMASTER $3.50 — A combat-stunt ace from STERLING for .29 to .35 eng. Profile, prefab kit. Big 42" span. Order yours from AHC. Ringmaster Jr. 36" .099-.19 ..... $2.50

FREE FLIGHT & R/C

BLAZER ½A 2.50 — C-G MODELS contest flyer for .049 engines. 40" Wingspan. A truly excellent performer. Order from AHC.

MODEL BOATS

Harbor Tug 18.95 — **Ocean Tug 24.95** — From VECO, these 2 amazingly realistic powered tugboats. For R/C control with elec. power. Prefab kits.

AMERICAN SCOUT $16.95 — Amazingly authentic U.S. Line's Cargo Ship. 50" long, by "Sterling". For elec. or gas power, ideal for R/C. 339 Pc. Fitting Set $10.95

Fitting Set $9.95

42" CORVETTE $26.95 — Sterling's exciting Chris-Craft model. An R/C fan's dream performer. 48" long. 14" beam. All prefabricated.

RUBBER MODELS

Guillow Flying SCALE MODELS 1.29 ea. — 18" span. Rubber Pwr. WW I Heros: 569. Spad. Fokker D7. A'tron. Newport. Sop. Camel.

CLEVELAND "Custom" SF Series

SF-13	1917 Spad VIII	19" 3.00
SF-15	1917 Fokker D7	21" 3.25
SF-17	1931 "Gee Bee"	18" 4.50
SF-21	Curtiss Hawk P6E	24" 4.95
SF-49	Curtiss Goshawk	24" 5.95
SF-77	P40 "Warhawk"	28" 6.25
SF-79	F4U "Corsair"	30" 6.50
SF-86	P38 "Lightning"	31" 8.95

READY - TO - RUN

YELLOW JACKET 6.95 — Brand new WEN MAC gull wing ready to fly sensation. Big value outfit. Rotomatic starter. Real bargain!

READY TO FLY 8.95 — **COX "PITT'S SPECIAL"** — Complete with "Pee Wee" .020 Engine & automatic starter. All plastic model. 10" Wingspan. Order yours from AHC.

LOOK!

TIGER JET ENGINE — **REG. $19.95 9.95** AN AHC SUPER BUY!

Save $10.00 on this powerful jet type engine with a 2½ lb. thrust. Quick starting & easy to mount. Pro-rotomod. 18½" long.

ATWOOD CADET .049 GLO ENGINE SAVE $2.95 — DELUXE ATWOOD SMIDGE .049 ENG. SOLD FOR 3.95 $4.95

PROP ROD ..... $7.95 — Cox's streamlined, colorful racer... 12" long. With an .049 Baby Bee eng. Unbreakable spring starter, too!

Why Order from any Manufacturer?

We carry in stock all the planes, motors, etc. of every manufacturer advertising in this magazine.

ORDER from AHC and GET FREE FREE FREE PREMIUMS — Postage & Insurance — Membership in MODELCRAFTERS of AMERICA

25 Manufacturer's CATALOGS & SHEETS For Only $1 plus .. 64 page Giant AHC Catalog that sells for 25c

Herkimer (OK) - Enterprise - Comet - Chemmod - X-Acto - Wen Mac - Stencil - Cox - Consolidated - K & B - Fox - De Bolt - Mawk Models - Berkeley - Sterling - Austin - Aurora - Revell - Scientific - Veco - Monarch - Etc.

Here! When "out" of a particular catalog, we reserve the right to substitute.

MUSTANG P-51 $12.95 — Comet's all plastic two-tone beauty. Has an OK Cub engine w/auto. Recoil starter. 18" wingspan. Deluxe!

SUPER CUB 105 7.95 — Realistic, smooth flying COX model. Hi-impact plastic. Comes with Thimble Drome .049 engine. 17½" wingspan.

FLIGHT TRAINER 7.95 — Cox's TD-4 with a big 21½" span. Ideal for beginners — almost indestructible. Babe Bee .049 engine.

PIPER TRI-PACER $7.95 — Brand new COMET scale flyer with a Cub .099A engine. Colorful, rugged plastic model with a 16" wingspan.

O & R MOTORJET 14.95 — All metal racer. Starts and launches automatically. Has an .049 engine with automatic starter. A real beaut!

With Recoil Starter $13.95 — **AUTOMITE $12.95** — Speeds of 35 mph. A truly fun to operate race car by Wen Mac. Complete in every detail. Plastic.

With Recoil Starter $13.95 — **AQUAMITE $10.95** — Here's Wen Mac's extremely popular speedboat—ready to run and super seaworthy. 13" long. All plastic.

MISCELLANEOUS

FAMOUS MERCO PLASTIC SPINNERS — Colors: Yel. Blk. Silv. Blue. Red. Gn.

1½" Diam. Needle Nose or Std.	.29
1½", 1¾", 2" or 2½" Needlenose	.39
1½", 1¾", 2" or 2½" Std.	.39

Engine Accessory Kit — Oil Can. For all model engines. Has fuel, spout, battery leads, plug wrench, etc. **1.39**

U-REELY — Our most popular control handle. Ind. Wire ..... $7.95; Braided .012 ..... 8.75; Braided .018 ..... 8.95

MAGNESIUM SPEED PANS

	Top	Btm.	Cowl	Stab	Wing
½A	2.60	1.95		.35	
A	2.95	2.95	2.50	.85	3.50
B	3.45	3.45	2.75	1.00	4.00
C	3.95	3.95	3.00	1.15	4.50

OVER 5,000,000 MODELERS KNOW

YOU BUY WITH CONFIDENCE AT AHC

Use Our Handy Order Blank Next Page

HOW TO ORDER

Send payment in full (sorry, no stamps or C.O.D.'s) to:

AMERICA'S HOBBY CENTER

146M West 22nd St., New York 11, N.Y.

Modelers! **EVERY SINGLE THING YOU ORDER FROM AHC CARRIES OUR FAMOUS MONEY-BACK GUARANTEE! AND . . . GET FAST DELIVERY, TOO!**

Foreign Notes

(*Continued from page 2*)

and the performance, using stock props and fuel, has been remarkably good, especially when one remembers that the O.S. Max-15 is not usually looked upon as a speed engine. On the first day out, the model clocked 121.8 mph on its third flight. A Tornado 6/8 prop, with diameter cropped to 5¾ in. was used. Fuel was Australian Keogh's Racing Glo (with 30% nitro) and lines were .008 dia.

GREAT BRITAIN

This year's British Nationals, held May 25-26 and, as usual at Waterbeach RAF station, near Cambridge, was blessed with much the same weather as last year: fine at first but heavy rain on the second day. The entry was big: 1,705 total, from 803 individuals and 137 clubs. Some very good performances were recorded. In the three main free-flight events; Thurston Cup for towline gliders, Model Aircraft Trophy for rubber and Sir John Shelley Cup for gas, there were numerous perfect scores, necessitating fly-offs to establish final placings in each event.

In team racing, Britain has the hottest performers in Europe and this, once again, was borne out by the exceedingly fast times in the finals. In the Class B event, the team of Walker and Tuthill, using an Eta 29 powered model, came within 1/5th second of the all-time British record for this event (by J. McNess) by covering the ten miles in 7:09.2, an average speed, including stops, of nearly 84 mph. Close behind was McNess with a time of 7:18.8. No less remarkable was G. Yeldham's performance in the Oliver Tiger dominated Class A event for .15 cu. in. motors, with a time of only 7:26.

In the Gold Trophy for C/L stunt, the expected eclipse of the small model, following the adoption of American rules, was not quite complete. P. Ridgway won with a .15 cu. in Eifflaender diesel powered model, but only 3 points behind was Bill Morley's Thunderbird, hauled by the prototype Merco 35 glow engine. This latter is an entirely new British motor designed and built by Ron Checksfield and it is hoped to put it into production and thus satisfy some of the demand that exists in Britain for a good glow 35 stunt engine. Currently, the prototype is in your reporter's hands for dynamometer testing.

In RC, Chris Olsen put up the best British demonstration of stunt flying yet seen at a Nationals contest, to win the multi-channel event. Rudder only, on the second day, was not impressive and showed little improvement on previous years. One of the best built and nicest performing RC models seen at the meet was USAF Sabre pilot Ed Carroll's K&B 23 powered model. Based on the Live Wire, it had English equipment operating rudder, elevator and motor speed—the latter via a clockwork system moving a butterfly throttle in the carburetor. During the RC contests a monitor was in use. This, equipped with amplifier and speaker system, audibly responded to the signals of each transmitter, giving an interesting sidelight on the control response of different models, as well as a warning of any outside interference.

JAPAN

Due to be held a few days hence from this writing are the final eliminations for Japan's team to the World Championships. Meanwhile, two free-flight contests to the new FAI rules have already been held and give some idea of the level of Japan's efforts under the new "heavyweight" rules.

In the recent All-Japan Free-flight meet at Osaka, Takeo Asano (who represented Japan at the 1956 Championships) had a

(*Continued on page 38*)

Radio AHC Control

NEW . . . an unbeatable R/C Combination that Challenges ANY COMPARISON!

AMTRON "Vanguard" TWIN TUBE R/C OUTFIT PRINTED CIRCUIT

Here's the Precision Equipment You Always Wanted . . . at a Fraction of What You'd Expect to Pay!

We ask every R/C fan to order and compare this truly precision engineered R/C equipment. Examine it for 14 DAYS FREE! If you aren't convinced that it's equal to and superior to ANY SET selling up to twice the price, return it for full refund! No Questions Asked!

OPERATES ANY MODEL . . . BOATS, CARS & PLANES From ½A to the Very Largest • Up to 1½ Miles

"VANGUARD" RECEIVER is a superior quality outfit—unmatched for reliability, accuracy and performance. It will fit into just about any model you can find, weighs a mere 1¼ ounces (including relay) and measures 1½" x 2" x 1". Despite its light weight and compact design, it is one of the finest precision R/C instruments ever made. Other features include: One stage single tuning • All printed circuits • Twin diodes • Accurate & positive pin point control at all ranges • Low .15 battery drain as compared with .3 or .4 on most receivers • Saves you countless $$$ on battery costs • No pot required • 22½ Volt battery operation • Transformer that eliminates sensitivity control • New improved 1AG4 tubes • Super sensitive 5000 Ohm Jaico relay • Plastic case • All prefabricated & easy to assemble • Complete Instructions & Diagrams included.

SALE PRICED AT LESS THAN THE REGULAR WHOLESALE COST!

"VANGUARD" TRANSMITTER is a powerful output instrument with all the precision components found only in the most expensive units. It has a simplified built-in tuning indicator with a one adjustment feature. Tuning-Eye light for E-Z checking. Printed Circuit Chassis. Exclusive new design that reduces "B" battery drain, yet supplies maximum power output. Other quality features include: Deluxe Crystal, Powerful 3A4 Tube, Handsome portable Aluminum case that you easily build in your hand and really easy to assemble construction. The step-by-step assembly instructions are a cinch to follow. R/C fans who have seen the "VANGUARD" TRANSMITTER tell us its the biggest bargain they ever saw — equal in power and quality to the most expensive!

GET BOTH THE RECEIVER AND TRANSMITTER KITS Both for only $24.95 A Guaranteed $39.95 Plus Value

ASSEMBLED OUTFIT Same as Above, But Ready-To-Operate $34.95 Less Batt. ALL "FINISHED, TESTED AND ASSEMBLED READY FOR USE.

INDIVIDUAL PRICES

"Vanguard" RECEIVER KIT with All Components, less batteries	$12.95
ASSEMBLED RECEIVER. Ready-To-Use & Tested, less batteries	17.95
"Vanguard" TRANSMITTER KIT, All Components, less batteries	12.95
ASSEMBLED TRANSMITTER. Ready-To-Use & Tested, less batteries	17.95

RETURN IN 14 DAYS IF NOT 100% SATISFIED

We want you to prove to yourself the excellence and terrific value of these AMTRON "VANGUARD" R/C instruments by actually examining them FREE for 14 days. If this isn't the best buy you ever saw, return UNUSED and you get every penny refunded.

R/C BARGAINS UP TO 60% OFF

Finest Quality • Fully Guaranteed • Order Now

½ PRICE $1.98 R/C Deluxe Receiver INSTALLATION KIT 98c

CRYSTALS 27.255 mc. Very Finest Quality $6.50 VALUE An AHC Super-Buy! Fully Guaranteed 2.89

MILLIAMETERS AHC Sale on Quality R/C Test Meters 0 - 3 Reg. $4.95 3.95 | 0 - 50 Reg. $2.75 2.29

	REG.	SALE
6000 OHM SIGMA RELAY	$2.95	$1.69
REC. ALIGNMENT TOOL	.65	.39
S.M. ESCAPEMENT	3.95	2.95
1464 R/C TUBE	2.95	1.79
XFG1 R/C TUBE	3.85	2.95
3A5 R/C TUBE	1.25	.98
R/C MULTITESTOR	$16.95	$12.95
REED BANKS (3)	24.95	14.95
5 Bank ... 15.45 6 Bank		15.95
KEYING SWITCH	.45	.29
PLUG & JACK SET	.25	.15
COMPOUND ESCAPEMENT	5.95	3.95

NEW, LOW-PRICED PRECISION RADIO CONTROL OUTFIT

Here it is! The Sensational, New AMTRON "SPACE CADET"

Get Both receiver and transmitter . . . plus tubes, escapement, crystal, etc. All for the one low price!

$25.00 Value $14.95* IS ALL YOU PAY

*Less Batteries, Only.

One of the most dependable performing R/C OUTFITS we've ever seen (second only to our deluxe "Vanguard" Outfit). FULLY TESTED, too, and GUARANTEED to operate all models . . . from Half-A to the very biggest. Very simple assembly, too! Operates on 27½ mc., Ranges 1 - 1½ miles. Features a lightweight, compact RECEIVER . . . weight under 3 ounces. An extremely accurate performer, with all deluxe components. Powerful, hand held TRANSMITTER . . . a truly precision instrument . . . complete with metal case. The new Amtron "SPACE CADET" is all prefabricated, comes with easy to follow assembly instructions. It's easy to operate, too!

ABOVE OUTFIT ALL ASSEMBLED Ready-To-Operate PERFECTLY TESTED & ASSEMBLED! Less Batteries 23.95

Kit Outfit Easily Worth $25 . . . 100% Guaranteed, Too!

R/C FANS!

AHC HAS EVERYTHING YOU WANT! EVERY BRAND! ALL PARTS AND ACCESSORIES! SEND US YOUR ORDER AND GET ALL THE AHC EXTRAS!

Field Strength Meter 9.95

A real buy! Complete! Wired, adjusted and Ready-to-Operate in plastic case. "AMTRON"

Receivers—Single Channel	
Babcock BCR-6A or B (Assbld.)	39.95
Magic Carpet Kit 21.95 Assbld.	26.95
Babcock BCR-3 (Assembled)	29.95
Bedaco (Assembled)	24.95
Bramco (Assembled)	29.95
Citnchio PR27 19.95 (Assembled)	24.95
Citnchio 465AR (Assembled)	24.95
CG RI Kit 19.95 (Assembled)	26.95
Deltron R100 (Assembled)	24.95
Deltron R109 (Assembled)	29.95
Rextrol ☐100 13.95 200	19.95
Super A'trol 12.95 (Assembled)	19.95
Tone Aerotrol (Assembled)	24.95
Receivers—Multi Channel	
(2) Babcock BRC-7	69.95
(2) Citnchio REB	39.95
(2) CG RT2 (Assembled)	69.95
(3) CG RT3 (Assembled)	99.95
(5) CG RT5 (Assembled)	159.50
(8) Citnchio MSR-8	99.95
RAYTROL (3) Assembled	64.50
(5)	86.00 (6) 91.75
Transmitters—Single Channel	
Babcock BTC-2 (Assembled)	39.95
Magic Wand Kit 19.95 Assbld.	24.95
Bedaco (Assembled)	24.95
Citnchio Kit 19.95 (Assembled)	24.95
MTR Citnchio Kit Transistor	21.95
MTR Citnchio Assembled	26.95
Citnchio 465MC (Assembled)	24.95
Citnchio 465mc Transistorized	26.95
CG T11 Kit 15.95 (Assembled)	21.95
CG T12 Kit 22.95 (Assembled)	31.95
Deltron T89 (Assembled)	21.95
Deltron T100 (Assembled)	29.95
Super A'trol 500B (Assembled)	34.95
Super A'trol 19.95 (Assembled)	24.95
Tone Aerotrol (Assembled)	44.95
Transmitters—Multi Channel	
(2) Babcock 465MC (Assembled)	69.95
(2) Citnchio BEX (Assembled	39.95
(5) CG T5 (Assembled)	79.95
(8) Citnchio MST-8	99.95
RAYTROL (3) (Assembled)	59.00
(5)	68.75 (6) 79.50
R C Parts & Accessories	
Gem Relay 5000 ohm 4 Ct. 7500	5.45
Super Aerotrol Escapement	3.95
Berk. DE Relay 7.50 Comp. Escap.	5.95
Babcock Proportional Servo	14.50
Babcock Proportional Pulser	10.95
Babcock Super Comp. Escap.	7.95
Babcock Mtr. Control Escap.	8.95
Citizenship Escapement 5.95; S.C.	7.95
Cameron SN Escape (2 pos.)	5.95
Cameron SN Escape (4 pos.)	6.95
Cameron Compound Escapement	8.95
Babcock Elevator Servo	12.50
Bonner Vari-Comps. Single	6.95
Dual ... 10.95 Rudder Elev.	9.75
Bonner Servo 14.95 SN Escap.	5.95
Multi-Servos 2 PN 11.95; 3 PN	16.95
2 PZN 11.95; 3P 10.95; 5PN	24.95
Multi-Servo Rudder L or R	10.95
Multi-Servo Elevator U or D	10.95
Bellcrank & Horn (RC)	.75
Relay (Amtron) Super Sensitive	3.95
Crystal 27½mc	3.95
Installation Kit	1.00
U-15 Battery Box 1 cell, 30 2 cell	.50
Battery Boxes, 1 cell 25; 2 cell	.50
2 cell 65; 4 cell 85; specify batteries	
Tubes: XFG1 3.85, 3A5 1.25, 1AG4 2.95	
1N4 1.95, 6U4 1.95, 1U8	1.50
Test Meter (Citizenship)	22.95
Batteries: XX45 or 467, 67-V	2.50
XX30 or 455, 45V	2.45
4F or 742, 1½V	1.35
U15 or 412, 22½V	1.50
0-3 Milliameter 4.95 0-50	2.95

ATTENTION ALL R/C FANS! FREE AHC "BARGAIN-BULLETIN" Ask for Bulletin "RCB". Lists many, many big bargains. Send a self-addressed, stamped envelope for your FREE copy.

America's Hobby Center, 146 W. 22nd St., N. Y. 11, N. Y.

USE HANDY AHC ORDER BLANK NEXT PAGE ➡

Shop AHC For SERVICE $AVE AT AHC

Bargains

$AVE and Largest SELECTIONS $AVE AT AHC

COMPLETE FLYING OUTFITS

FREE BONUS OFFER

Free of extra cost with every plane and engine.

Buy your engine and plane from us at the same time and get all your accessories free!

STANDARD MDSE. ONLY — Correct Size Finished Propeller — Engine Handbook — 18" Insulated Ignition Wire — Insignias — Giant Book on Construction — How to Build and Fly Them — Cement — Sandpaper — Metal Bellcrank with Bolt, Nut and Washer — Elevator Horn — Elevator Hinges — Lead-in Wire — Push-Rod Wire - U-C Handle - Control Lines - Ownership Decal

STANDARD MDSE. ONLY

NOTE: You may substitute any plane or engine of equal value for any plane or engine included in these offers. Choose from the listings in the first AHC ad.

2 PLANE OUTFIT

BIG $10 flying outfit FOR ONLY 5.99

Believe it or not! 2 COMPLETE PLANES Make and fly BOTH these 18" profile models

F-86 SABRE — F-51 MUSTANG — SPACE BUG JR. .049 — PLUS ACCESSORIES AND BONUS EXTRAS — With Cub .049 $7.39

BIG $10. VALUE

NOW ONLY $7.50 with Atwood .049 Engine

PLUS ENGINE or With G.K. Cub .049 Engine $8.50

ATWOOD .049

PLUS ACCESSORIES AND BONUS EXTRAS

X-15 RACER — CURTISS HAWK — SUPER STUNTMASTER — F-51 MUSTANG — CHIPMUNK — DELUXE BASIC TRAINER

Take your choice of one of these deluxe U-Control prefabricated models. Each is completely easy to assemble and fly!

FREE FLIGHT OUTFIT

DELUXE $15.00 OUTFIT $8.95

FAMOUS CONTEST MODEL

AMAZON "400" 62" SPAN — PLUS — NEW & POWERFUL FOX .15 ENG.

MEETS F.A.I. and A.M.A. RULES

Thoroughly tested and contest proven! AHC brings you this sensational Free Flight outfit . . . and we've bargain priced it, too! The "AMAZON 400" is light, rugged and efficient . . . designed to exact every inch of altitude possible for its thermal soaring glide. Kit is all pre-fabricated . . . with selected balsa and plywood parts and full size thoroughly detailed plans.

& COMPLETE AHC BONUS EXTRAS, F.P. ACCESSORIES, ETC. . . . WORTH MANY $$

COMPLETE JET OUTFIT

DELUXE OUTFIT ONLY $2.95

The hottest Jet Flying Outfit you can find! Scale models have realistic shaped fuselages, etc. — NOT Just profiles! E-Z to assemble, Anyone Can Fly!

12" SPAN DOUGLAS SKYROCKET — 15" SPAN F-86D SABRE JET — CHOOSE ONE PLANE PLUS JET ENGINE & SUPPLY OF SOLID FUEL CHARGES

PLUS Catapult Launcher, All Accessories & Finishing Items. 100% Complete Outfit.

ORDER ANYTHING IN THIS MAGAZINE HERE

Olympic Racehorse Powered speedboat for elec. motors or Outbd. 18" Long, 7" Beam. Prefabricated kit. REG. 4.95 $1.95

FOX .29 We have a limited quantity of this famous eng. on sale! Reg. 15.95 11.95

Famous "PACTRA" AEROGLOSS Special buy! 12 oz. Spray cans in choice of Red, Cream, Blue or Green. Terrific for finishing models. Limited! Reg. $1.79 98¢

Regularly 60c to 95c EACH FUEL TANKS 3 for $1 Grab-Bag Special! Assortment of famous brand tanks . . . square, round, wedge, etc. Our choice of shapes. Your choice of ½A, A or B

While They Last! FAMOUS O&R .23 ENGINE Reg. $11.88 $6.95

"AERONCA" 18" span U-Control model for any ½A eng. (.020 to .074). Plastic fuselage, pre-built wing & all profile parts. REG. $2.95 1.39

10 DECAL PICTURES Assorted. Perfect for dressing up your models. $1.50 Value FOR ONLY 98¢

Choice of Jet or Std. SCALE TEAM RACER PLASTIC PILOT HEAD 39¢ Reg. 75c

FULL SIZE Scale Plans Solid models like: P-51, B-36, Focke Wulfe 190, B17E, Spitfire, B-26, Kingfisher, P-38, etc., etc. Scale Plans w/3 view drawings, etc. We'll send you an assortment for only — 15 for 49c

RUBBER WHEELS 1" pr. 10c (3 Pr. 25c) — 1¼" pr. 15c (3 Pr. 35c) — 2" pr. 20c (3 Pr. 45c) — **2" Race Car Wheels** ½" Wide — Reg. $1.50 SET OF 4 .... 50c

FAMOUS BRAND O & R PROPS Reg. 35c or 45c Ea. 10 FOR $1 — 60 for $5.00

7-7; 8-7; 9-8; 9-9; 8-10; 9-8; 9-10; 10-4; 11-4; 11-9; 11-10; 12-9; 13-8; 14-8; 14-9

Glo Plugs Reg. 65c 49c — 3 for $1.00 — An AHC Super Value! Specify Long or Short Throw

---

SALE

ALL IMPORTED MODEL Prices Reduced

	REG.	SALE
SA-16 Albatross 53" (2) .19-.35	$25.95	$19.95
Beech Bonanza 36" .19 to .35	10.00	7.95
F-8-F Beercat 36" .29 to .35	10.00	7.95
B-29 Boeing 48½" (4) .09 to .15	29.95	19.95
B-29 Boeing 84½" (4) .19 to .29	39.50	27.95
B-36 Convair 113" (6) .19 Eng.	89.50	34.95
C-46 Commando 62" (2) .19-.35	29.00	19.95
F-4U Corsair 31" .29 to .35	10.00	7.95
C-47 Douglas 48" (2) .35-.19	24.50	19.95
DC-6B Douglas 71" (4) .19 Eng.	47.50	34.95
FW190 Focke Wulf 36" .29-.35	10.00	7.95
ME109 Mes'schmitt 36" .29-.35	10.00	7.95
F-51 Mustang 36" .29 to .35	10.00	7.95
L-17 Navion 35" .19 to .29	10.00	7.95
AD-4 Skyraider 36" .29 to .35	10.00	7.95
Super DC-3 61" (2) .19 to .29	29.95	19.95
C-45 Beechcraft 55" (2) .19-.29	$39.00	$19.95
B-26 Invader 57" (2) .19 to .29	29.95	19.95
B-26 Invader 46" (2) .35 to .19	19.95	12.95
F-100 Super Sabre 22" Tiger Jet	24.50	14.95
F100 Super Sabre 27½" Byrne Jet	29.95	18.95
F-86 Sabre Jet 36" Byrne Jet Eng.	24.50	14.95
F-86 Sabre Jet 34" Byrne Jet Eng.	29.95	18.95
F-94C Starfire 31" Tiger Jet Eng.	19.95	14.95
MIG-15 24" Tiger Jet Engine	22.50	14.95
MIG-15 33½" Byrne Jet Engine	29.95	18.95
F-84 Thunder Jet 32" Byrne Jet	22.50	18.95
F-9-F Cougar 32½" Byrne Jet Eng.	29.95	18.95
Zero Fighter 34" .29 to .35	10.00	7.95

ALL IMPORTED ENGINES, TOO!! WRITE FOR COMPLETE LIST.

AHC ELECTRIC OUTB'D. MOTORS 3 to 6 volt, takes up to 24" boats. A Terrific Bargain. Outb'd. Jr. Reg. $2.95 1.99 — Std. Size Reg. $3.50 2.39

"Sea Scooter" REG. 4.95 A terrific bargain! This hydro speedboat is 24" long, with an 11" beam. For gas or elect. motors or R/C. All prefab. w/mahog. exterior.

DOPE BRUSHES We made a special purchase and can offer you a real "buy" Assrtd. sizes $3.00 Value 20 for $1.00

"MIGHTY MIDGETS" 3 rubber pwrd. models 14 - 18" spans. "V" - 16" "Dragon" and "Bandit" Reg. 59c ea. 3 for $1

DECAL BARGAIN Worth twice the price easy! You get 1 (8½") AMA Nos. & Alph; 4 U.S. Army; 6 Pictures; 3 Sheets Solid Color; 1 Sheet Checkered; 12 Assrtd. Nos. & Alph; Plus Many, Many Borax Decals & Tips & Hints on Use of Decals. Bargain $1.00

SET-MATE REG. 2.95 $1.95 A real bargain! This on-the-line model powers with .049 to .074 eng. Prefab sheet construction. Now on Sale!

Spirit of St. Louis Several buy! Authentic scale U-C models. Prefab bits. Take your pick. 24" MODEL for .049 to .14 Eng. REG. $2.95 1.95 — 26" MODEL for .09 to .23 Eng. REG. $4.95 2.95

PLIERS 75¢ EACH FINEST IMPORTED Choice of: Rd. Nose; Flat Nose; Diagonal; Cutter; Snipo or Combination.

Wiener's Model Aircraft "Plan Book" 132 pgs. of plans (Gas, R/C, Rubber, etc.). By famous designers. Reg. $1.00 50c

GLUE TUBE NOZZLE REG. 55c 19¢ — An AHC super buy! It fastens easily to top of tube. Special threads in nozzle cut their own threads for secure, non-clog attachment. A must for every modeler. GLUE

SILK or NYLON Finest quality. Silk colors: Yellow, Blue, Red or White. Nylon: Yellow or White Reg. $1.50 a yd. 98¢ YD. — Checkerboard 33¢ Reg. $1.98 yd. — 1.49

AHC PARTS BOXES Transparent plastic with hinged tops. 1¾ x 2¾ x ¾" high. Ideal for small parts storage. Reg. 15c each. 6 for 50¢

MODEL BUILDERS Aluminum Stock PLANE Reg. 50c. With hardened 1" steel cutter. 3½" long. A real bargain! 29¢

"FOUR BULLETS" REG. $2.50 — ¼A sport & team racer. 4 designs in 1 kit . . . assembly & fly the one you want. 1.89

BWM .15 DIESEL ENGINE "Nationals" Contest Winner. Fast starting, high precision diesel eng. Terrific Performance. Power: .23 hp at 12,000 rpm. On Sale! 7.95 REG. $13.50

MODEL BUILDER'S BARGAIN TOOL KIT REG. $1.79 98¢ — A real bargain offer! Consists of Exacto knife, Modeler's Saw, Balsa Stripper, Needle File, Sandpaper, Screwdriver. This is a must outfit for every modeler.

SOLDER 10¢ — **SOLDERING IRON** Ideal for all model work. Reg. $2.25. A Real buy, at only $1.29

ELECTRIC MOTORS U.S. made 1" x 1" x 1" high. Reg. $1.98 $1.25 — Imported Motors, 1½ to 3 Volts. SPECIAL ..... 89¢

HOW TO ORDER

Please Print Your Order! Send payment in full. Sorry, No C.O.D.'s. Include 25c extra if order is under $2.00. Foreign Modelers—See instructions on left.

AMERICA'S HOBBY CENTER 146M West 22nd St., New York 11, N. Y.

AHC E-X-P-A-N-D-S! Send your order to our new, larger building. New, modern set-up speeds your orders back FAST!

PLEASE PRINT

Name _____

Street Address _____ Amount Enclosed _____

City _____ Zone _____ State _____

Quantity	Cost Each	Name & Description of Items	Total
		Total	

IF ORDER IS UNDER $2.00, DON'T FORGET TO ENCLOSE 25c FOR POSTAGE & PACKING

24 HOUR SERVICE AT ALL TIMES — Dept. M-98

ONLY 25¢ EACH

- ☐ WORKBENCH EDITIONS of the famous Winston books (Reg. $1.00 each) for only 25c ea.
- ☐ GLO ENGINE HANDBOOK. Tells all about the theory and operation of glo engines.
- ☐ CONTROL LINERS. How to build and fly them. Covers subject from A to Z
- ☐ GAS MODEL PLANE CONSTRUCTION. The answers to every problem you will ever meet

CATALOGS

64 Pg. Airplane Catalog 25¢ ☐
Std. Models Catalog 10¢ ☐
64 Pg. Railroad Catalog 25¢ ☐

Soldiers! Sailors! Marines! Orders placed through us get special attention. We understand your problems and take special care of your orders. No postage or packing charges on orders for over $2.

Canadians & Foreign Modelers! You save plenty by ordering from us. We accept your currency at market value. Canadian—$1.00; Sterling—$3.70; N.Z.—$2.35; Australian—$2.80; Philippine Peso—50c; etc. Add 10% for postage and packing (minimum 50c).

CALLING ALL N. Y. CITY MODELERS

VISIT OUR Hobby City 146 West 22nd St. New York 11, N. Y.

You'll find everything here . . . the world's largest stock — including the smallest engine parts. Experts on hand to help you!

24 HOUR SERVICE

SAVE TIME! USE THIS HANDY ORDER FORM

Everything carries the famous AHC Money-Back Guarantee!

GUARANTEED Safe Delivery Anywhere in the WORLD

DELUXE HOBBY CATALOGS

25¢ New, Giant 64 page "Silver Jubilee" Catalog. The most complete model reference source in the world. Thousands of Pictures! Over 10,000 items! 2 Colors! It has everything . . . every engine, every model . . . planes, boats, cars, rubber models, display and plastic . . . tools, accessories, parts . . . just everything!

10¢ Fine jumbo catalog of thousands of hobby items: Planes, boats, cars, engines, accessories, solids, gas, rubber.

25¢ 64 page 2-color RAILROAD catalog. HO & TT gauge . . . over 8000 items. Fully illustrated: loads of data, etc.

Great airplane, great model! Three-bladed 7 x 5 nylon props on K & B .19's flew the author's amphibian well in a 150-foot circle.

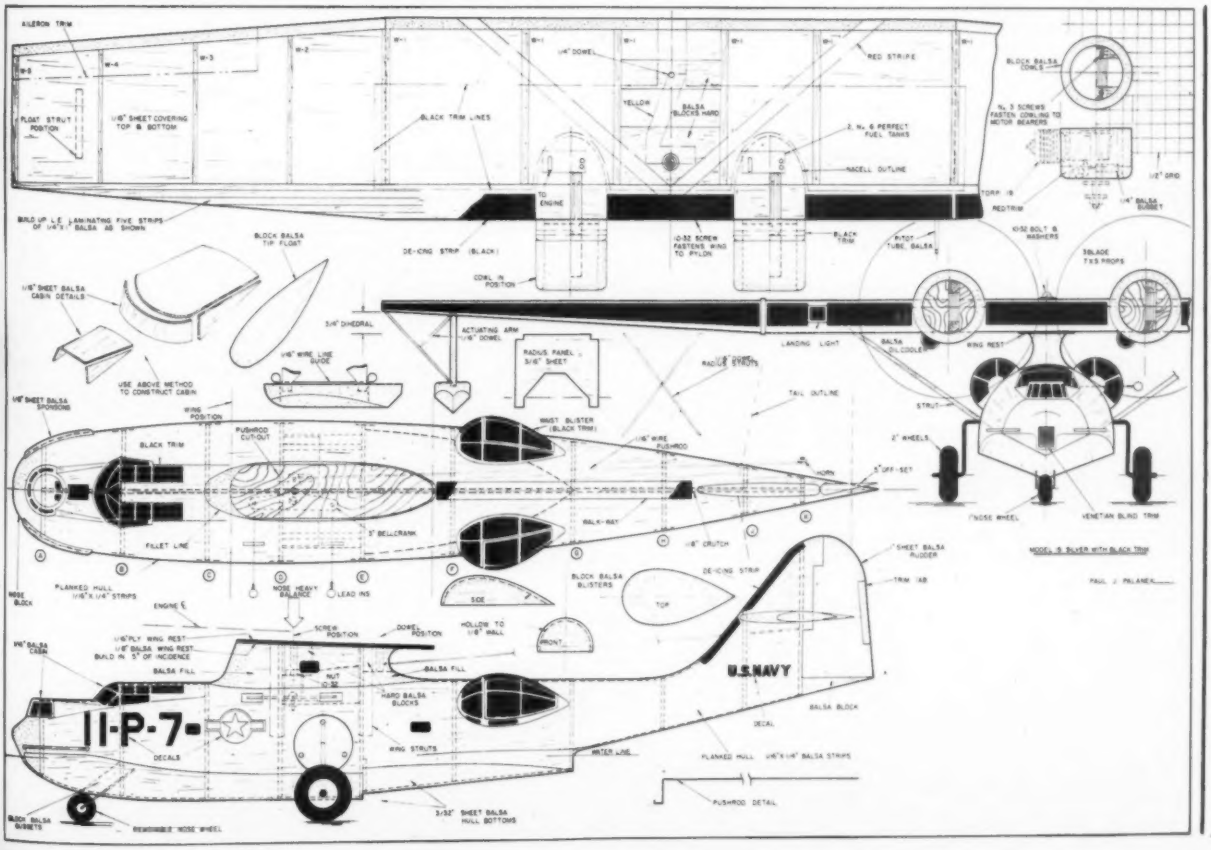
When it comes to scale, particularly multi-engines, you've got to have man-sized model, light and powerful enough to fly clean.

Dumbo!

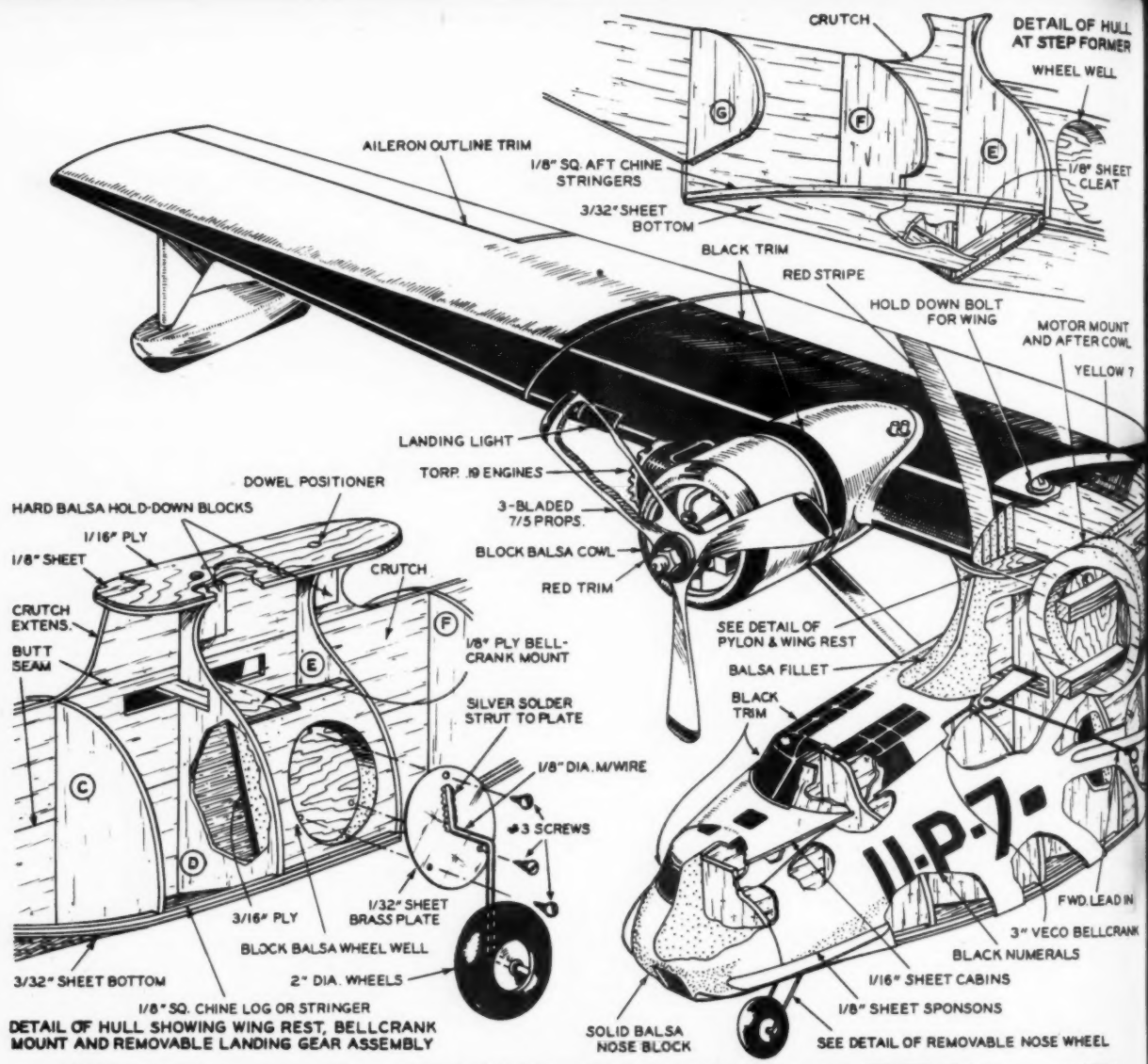
by PAUL J. PALANEK

For a long, long time readers have asked for a model of the PBY Catalina. This U/C job for .19's worth waiting for.

► This patrol-bomber has probably seen longer continuous service with the USN than any other aircraft. The first model was accepted by the Navy in 1933, and the last to spread its wings from a Convair plant was the year 1946. Some 3,000 "Cats" were built by Consolidated, Canadian Vickers, and Boeing Aircraft of Canada. Some PBY's still are flying! *(Continued on next page)*



FULL SIZE PLANS AVAILABLE. SEE PAGE 60



DETAIL OF HULL SHOWING WING REST, BELLCRANK MOUNT AND REMOVABLE LANDING GEAR ASSEMBLY

Why make a one-piece clumsy airplane when you can take off wing by turning one screw?

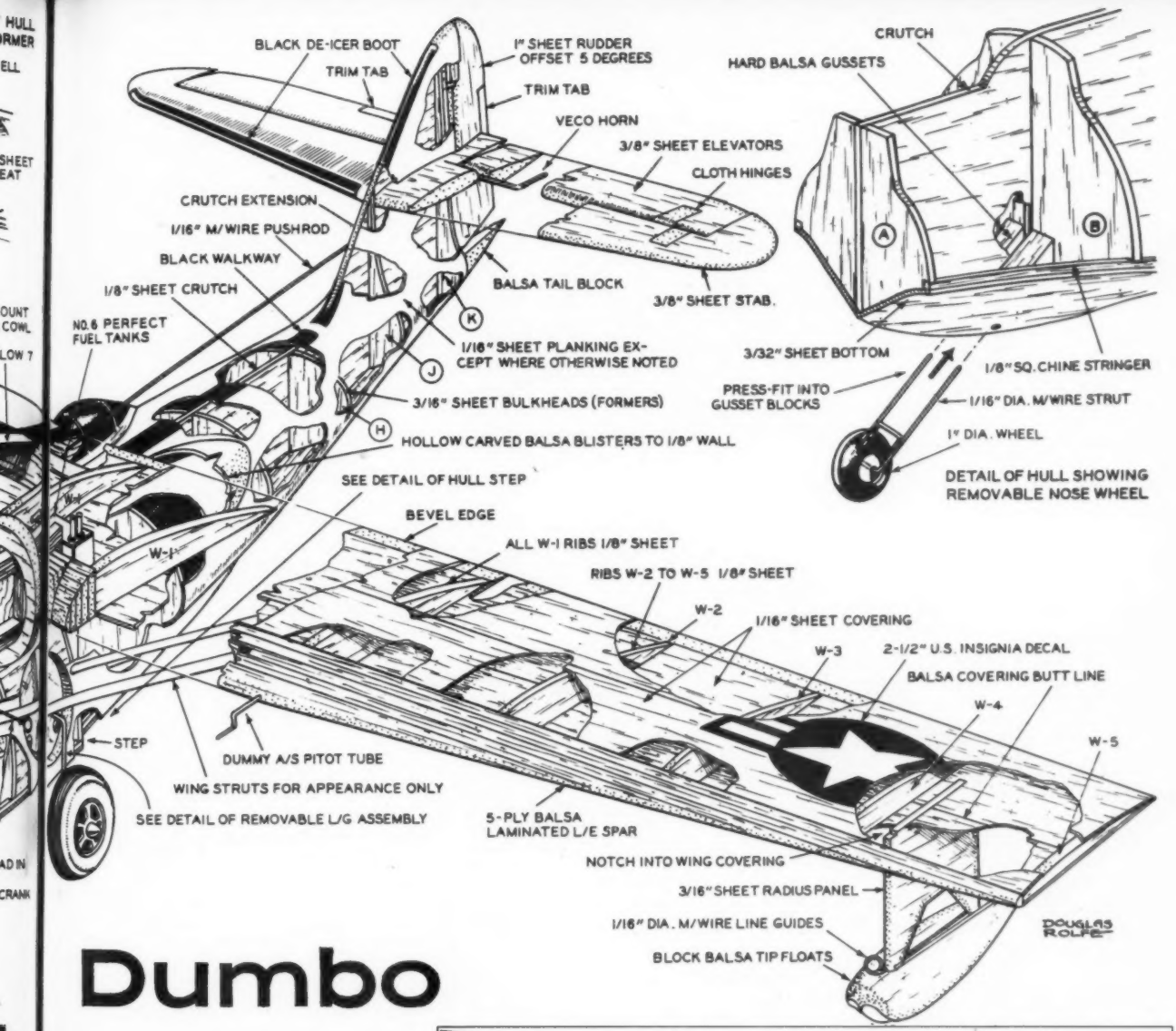
Water take-offs with a big "boat" a tremendous spectacle and the little Catalina provides a realistic imitation of the real airplane as it skims along. Landing gear detaches for ROW.

Dumbo -- *(continued)*

They served the British, Netherlands, Australian, Canadian and United States on all the battlefronts of the world during the last WW. They have been used for dive bombing, skip bombing, horizontal bombing, torpedo launching, reconnaissance, photographic missions and routine patrol work.

We imagine, if this great plane were to speak, it would speak most gratifyingly of its missions of mercy, Air-Sea Rescue work of course. Many downed airmen, particularly in the Pacific Theater, owe their lives to the stamina of the "Dumbos" (as they were so called) and their crews. Some "Cats" carried, strapped to the underside of their port wing, a 1,550-lb. rigged boat for Air-Sea Rescue operation. Depending on circumstance, the downed airmen were dropped the boat or a raft, and then picked up by Blimp or Chopper.

The specs: 1,200 h.p. Pratt and Whitney engines; empty, 17,564 lbs., loaded 34,000 lbs. Performance: max. speed 196 mph. at 7,500 ft.; cruising speed 130 mph at 10,000 ft.; service ceiling 15,800 ft.; range 2,520 miles. Dimensions: span 104 ft.; length 63 ft. 10 in.; height 18 ft. 10 in.; wing area 1,400 sq. ft.; and, in the waist blisters,



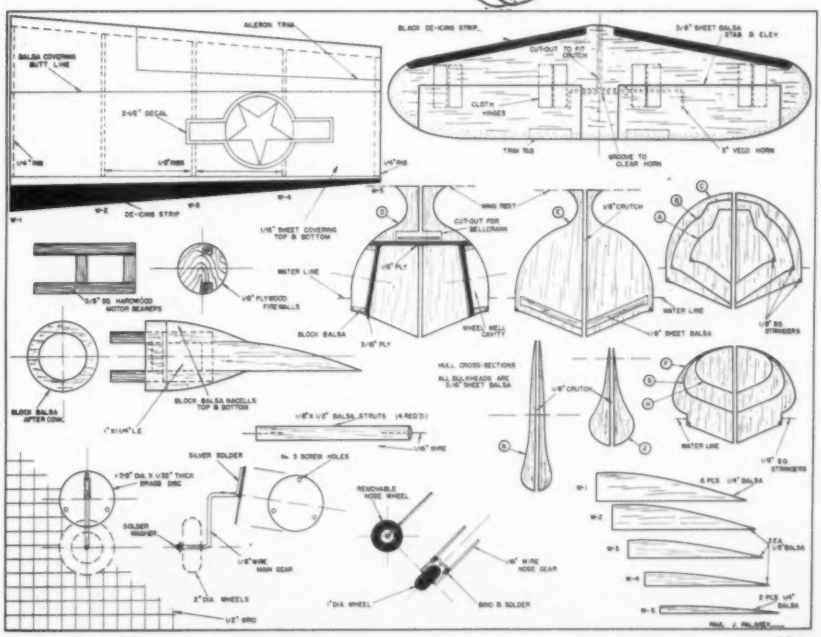
Dumbo

were mounted free-swinging 50-caliber guns.

Our "Cat" is a combination of ships that have long since passed into history; by this we mean, installing the dummy retractable, tricycle landing gear, the waist blisters and the pre-war markings all of which never appeared simultaneously on any original model of the actual airplane.

A pair of hot Torp .19s provide more than ample power. This should be maximum power and, if anything, the builder should work down with regard to engine displacement. Props are three-bladed nylon, 7 in. dia., 5 in. pitch. To facilitate transport, the wing dismounts from the fuselage pylon with the turning of a screw. The plans illustrate this, and position it clearly.

Building the fuselage is simple since the crutch method is employed; use ¼" sheet. All formers from A to K are shaped from 3/16" sheet balsa. Mark off the bulk- (*Continued on page* 48)

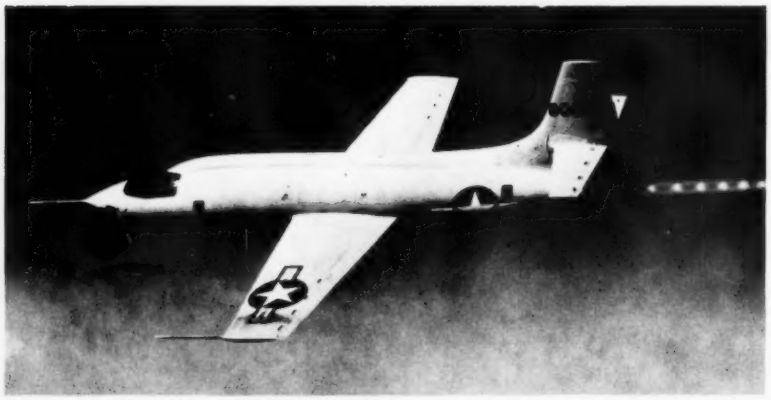


Hugged into the bomb bay of a B-29, the X-1A with Yeager at the controls hit 1,600 mph on this hop, breaking record by 300 mph.

MEN and SHIPS

by ROY CROSS

CHUCK YEAGER AND BELL X-1. In August, 1947, Yeager made his first hop in the rocket-powered explorer of speeds beyond the "sound barrier."



Under rocket power the original X-1 barrels along on test hop. Liquid oxygen, alcohol fuel, pressurized by compressed nitrogen.

► In the years just prior to WW2, test pilots and aeronautical engineers began to encounter a new obstacle in their quest for ever increasing speeds. In power dives and other sudden accelerations, planes became uncontrollable, were buffeted and sometimes broken by the newly encountered phenomenon of compressibility.

The interrelation of compressibility shock waves with Mach numbers was theoretically understood, but practical means of overcoming completely what a British aerodynamicist dubbed the "sound barrier" were still a decade away.

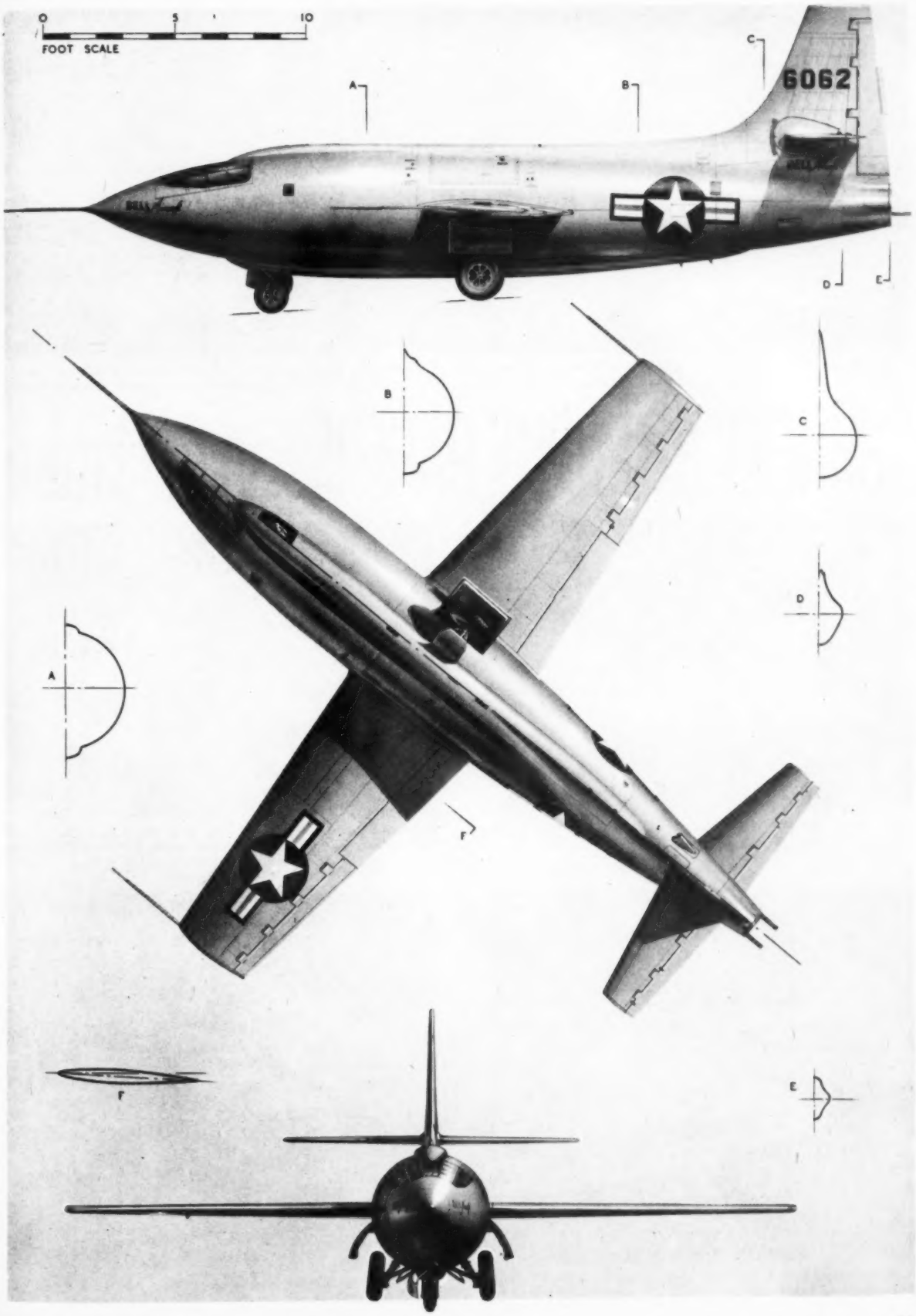
Then came the war, and high-speed projects were started by several of the major combatants as the piercing of this barrier to safe higher speeds became a vital military necessity. The new jet and rocket power sources under development made the problem still more urgent.

Brilliant work in Germany evolved the swept-wing concept, which though only a palliative, promised to give the Germans a commanding lead in the design of high-speed military aircraft. In England, Miles Aircraft Ltd. designed—to a 1943 Air Ministry specification—a 1,000 mph research aeroplane with such revolutionary features as a bi-convex wing section, "slab" tailplane, power-boosted controls, automatically-recorded test instrumentation, a pressurized capsule cockpit, and a gigantic ducted-fan afterburning jet engine of 17,000 e.b.h.p. Had the war continued, there would have developed a neck-and-neck race between Germany, Britain, and the U.S.A. to get the first aircraft through the sound barrier. Defeat halted the German progress, and the British project was shelved when nearly completed in 1946, in favor of a timid and abortive program with airborne models which put England years behind in the supersonic race.

Soviet Russia despoiled German aircraft plants in 1945, and claimed in May 1947 that one of their aircraft had exceeded the speed of sound—whether in a dive or level flight was never made clear.

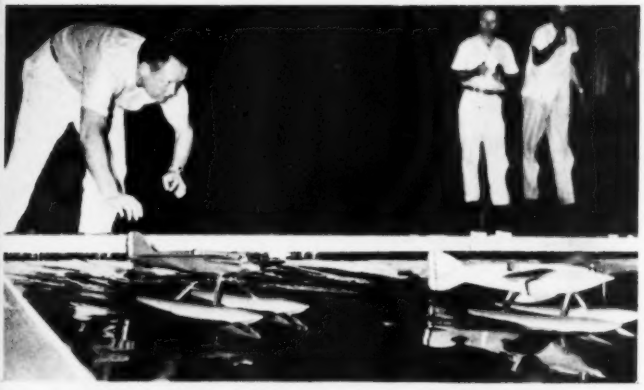
In the United States, the NACA had suggested as early as 1943 that a research airplane be built to explore the transonic region. Robert A. Wolf, of Bell Aircraft Corporation, attended the NACA conference of December 18, 1943, and later pressed his views on the need for such a high-speed project in a letter to Dr. George W. Lewis, then NACA director of aeronautical research. By April 1944, Bell had a three-view proposal on paper which was sent to NACA.

Supersonic speed capabilities for the design were broached later by Robert J. Woods, (*Continued on page* 58)


0
5
10
FOOT SCALE
6062
A
B
C
D
E
F

Men and Ships, members of the FAST Club and some of the Schneider racer models built by the club to a scale of 1" equals 1'. Powered by .09's to .15's, these amazing seaplanes can take off from water or grass! The float sizes are slightly enlarged for water take-offs.

SCHNEIDER TROPHY RACERS.. in miniature



Bud Hartranft releases two Glosters, one a V1 built by Granger Williams, the other a 1V-4, by Dan Lutz. Club-built pool 20 x 40 ft.

Granger and Lawrence Williams with their Curtiss CR-3, Gloster V1, and Supermarine S-4 seaplanes. Weights range from 16 to 32 ounces.

Packard-Kirkham built for the 1927 race, piloted by the late Al Williams, by Tony Palethorpe. Span 30 in., Torp .09 with a throttle.

From 1923, Curtiss CR-3 by Granger Williams, and 1925 Curtiss by Bud Hartranft. Lightest of seaplane models, Bud's weighs 16 ozs.

The great Italian Macchi M-67. Despite 29½ in. span, 25-oz. weight, zips off. Leighton Conrad.

L to R—L. Williams, C. Coryell, K. Storey, Dan Lutz, with Curtiss CR-3, Supermarine S-4, Gloster V1, Macchi M-67, Curtiss R3C2, Macchi M-72, Gloster 1V-B. Club also has Goodyear racers.

Already famous for flying demonstrations for TV programs, County Fairs, Air Force Days, Los Angeles Hobby Shows, the FAST Club now flies 17 Schneider racers from indoor pool.

Goggled, helmeted pilot set to go in Lawrence Williams' Supermarine S-4. Construction varies from balsa blocks and sheets to plastic.

Greatest of them all, the immortal Supermarine S-6B. Beautiful, authentic job by Rudy Tapper. Vacuum-formed polystyrene floats.

by GRANGER WILLIAMS and LES McBRAYER

► The models pictured and discussed in this article are the yet incomplete results of our efforts to produce a series of scale models showing the greatest development of racing aircraft in aviation history. The FAST Club for several years has been using such aircraft in staging shows or flying demonstrations for events such as the Los Angeles Hobby Shows, County Fairs, Air Force Days, and television programs. The idea behind these demonstrations is to show the public some of the entertainment and the fun possible with our model airplanes.

The club has a good many scale models of the various Thompson and Goodyear racers as well as other historic aircraft which have been flown for these shows. Dut to the club's interest in racing aircraft, the Schneider Cup Racers seemed a natural for a club project. The Schneider racers represent the great strides in the design and development of engines and aircraft during the period between World Wars I and II, and helped make possible the high-speed military aircraft developed by the beginning of World War II. The streamlining and beauty of the designs, as well as the methods of construction, were outstanding for propeller-driven aircraft even by today's standards. We felt that an entertaining event could be worked out by taking two or three of these seaplane models off of a pool of water and then racing them together in the air.

For the necessary three-view drawings, which dated all the way from 1913 to 1934, a great deal of research was necessary in magazines, books and plan service organizations. Dusty Carter, a contributor to technical magazines, was a great help to us by producing several drawings otherwise unobtainable. When we had collected all possible data, we were ready to draw up the three-views in full model size. We had quite a time deciding which scale to use, for we felt that all models should be built to the same scale. We wanted models large enough to be seen easily by the spectators, slow enough to allow flying on short lines in confined areas, and with light wing loadings for quick take-off and short landing run.

After much scaling and discussion, we decided to make all models to a scale of one inch to 1 foot, thus giving wing spans from 22" to 44". Float sizes had to be enlarged on some models to allow dependable take-off and landing characteristics, otherwise true scale sizes were closely held. A total of 17 aircraft have *(Continued on next page)*

This fly-past would make history! During 1958 Los Angeles Hobby Show, club staged three to six races daily for 10 straight days.

Macchi M-72, by Les McBrayer; and Macchi M-67, Leighton Conrad. Twin tandem-engined M-72 reached 440.7 and that was 24 yrs. ago!

Schneider Trophy Racers—*continued*

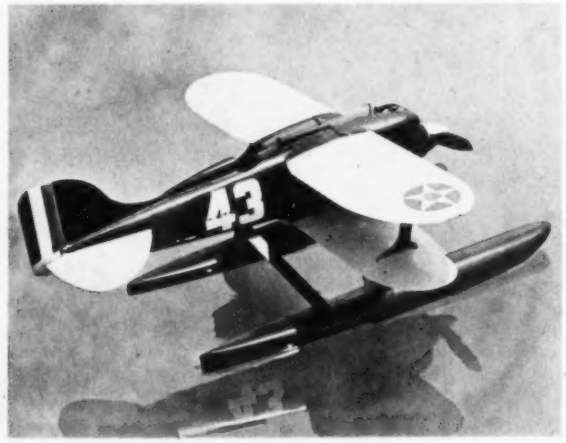
been drawn up, of which only nine so far have been constructed, but eventually we hope to have the whole collection. The final list of Schneider Seaplane racers researched and drawn up are: Sopwith Tabloid; Deperdussin; Supermarine Sea Lions III and IV; Packard-Kirkham; Macchi M-39, M-52, M-67 and M-72; Supermarine S-4, S-5, S-6 and S-6B; Curtiss CR-3 and R3C-2; Gloster IV-B and VI.

With the full size plans finished, we distributed them to the various club members. Each member was to work out his own structures and other details. This resulted in a lot of different ideas being used in the different models. Several methods of construction were used. Ruby Tapper's Supermarine S-6 fuselage and floats were made by moulding wet balsa sheet over carved wooden forms, in halves, and then adding bulkheads to the shells for assembly. The tail surfaces were solid-sheet balsa while the wings were sheet-covered ribs, Fireball style. Weight was 21 ounces. Dan Lutz's Gloster IV-B has a strip-planked and bulkhead fuselage, a solid-sheet tail assembly and solid-sheet carved wings. The floats are vacuum formed polystyrene plastic sheet with two halves and center keel cemented together and bolted to the landing gear. Weight is approximately 32 ounces.

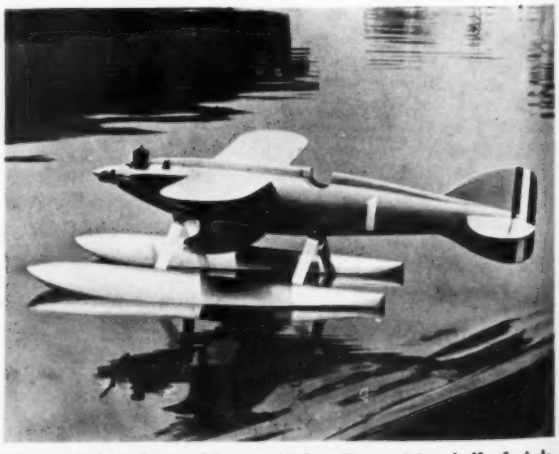
Bud Hartranft's Curtiss R3C-2, Granger Williams' Curtiss CR-3, and Tony Palethorpe's Packhard-Kirkham were all nearly identical in construction. The wings were solid-sheet balsa, wing struts plywood, tail surfaces solid-sheet balsa, and the fuselages and floats were carved and hollowed balsa blocks. The two Curtiss models are the lightest of all the models, weighing only 16 ounces each.

Les McBrayer's Macchi M-72 at 23 ounces, Leighton Conrad's Macchi M-67 at 25 ounces, Lawrence Williams' Supermarine S-4 at 24 ounces, and Granger Williams' Gloster VI at 23 ounces, were all of the same type construction. Wings were balsa sheet-covered ribs. The Gloster VI wing skins were first wet with hot water and then dried over forms, to obtain the compound curves, before applying them to the ribs of the wing structure. The fuselages and the floats were carved and hollowed balsa blocks, as were most of the removable cowlings. The cowlings on the Supermarine S-4 and Gloster VI were formed from fiberglass. Tail surfaces were all sheet balsa. The larger size plastic formed floats were later installed on the Supermarine S-4 for better water stability. The landing gear struts were all formed from sheet aluminum for strength. On all models we included as much scale detail as possible, but left off some of the items such as wire bracing, which would make maintenance and clean-up difficult. We wanted these models to fly day in and day out, not to be just shelf models. As just one example, during the 1958 Los Angeles Hobby Show, we staged seaplane races in from three to six shows daily for 10 days straight.

For the engines, we desired a rather small engine for indoor flying, not too fast or noisy, yet powerful enough to make a good clean water take-off in less than 40 feet. The then-new Torpedo .09 looked very good but with some of the models weighing close to two pounds we doubted that it might be powerful enough for the job. Finally we decided to make all models so that either the .09 or the .15 engines could be used interchangeably. Some of the engines were set up with radial (*Continued on page* 56)

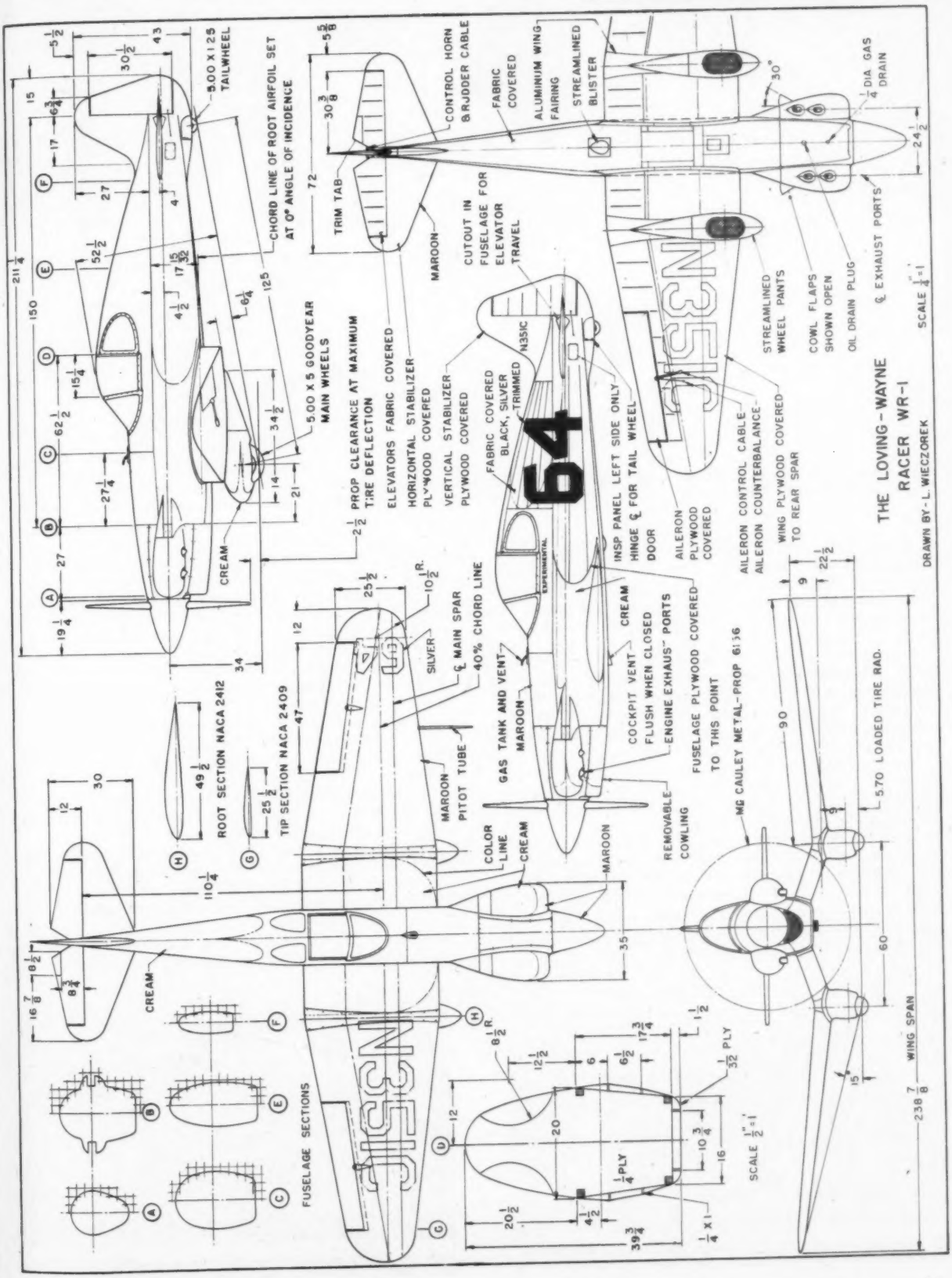


Cute, 22-in. Curtiss R3C-2, by Bud Hartranft, won the 1925 race with Jimmy Doolittle up. Snappy biplane model weighs only 16 ozs.



Gloster IV-B. Indoors, club uses 20-foot lines, giving half of circle for take-offs and landings. Flown off grass, 35-ft. lines are employed.

THE LOVING-WAYNE RACER WR-1



by KEN WILLARD

5 hours 29 minutes

Pilot-designer report on equipment and the methods used to break Russian-held FAI radio endurance mark.

Big Breathless, alias Avalon Breathless, piling up another 5½ hours on its fantastic log. Author holds handheld transmitter; single-channel receiver capable over five hours on one pencell.

World's most famous helper, Bill Glick, binoculars handy; Ken, minutes to go, looks worried.

► Setting a new world's endurance record of 5 hours, 29 minutes and 1/5 second, during the 51st annual convention of the Federation Aeronautique Internationale, was the result of a crash program undertaken at the urging of Russ Nichols, Executive Secretary of the Academy of Model Aeronautics.

Russ called me from Washington late in February and asked if I could, schedule an FAI endurance record attempt in the middle of April. He knew that delegates from 45 nations would be in Los Angeles. I agreed to try although I cautioned Russ that crash programs have a way of failing. He was willing to take that chance.

The big "Breathless" only had a two-hour endurance in its original configuration. After going up several blind alleys Bill Glick and I arrived at the configuration which we thought would do the trick.

We used the same fuel system, but we replaced the four tanks used on the Catalina flight with four larger tanks. Our maximum fuel capacity was 60 ozs. We replaced the Torp .15 with a Torp .19 and fitted the .19 with one of Bob Smurthwaite's exhaust slide gate baffles. Fuel consumption tests indicated that at cruising rpm's we could expect around 10 ozs. per hour.

To actuate the exhaust baffle we re-rigged the airplane control system, removing the elevator control. We used the third position of the Babcock supercompound escapemen to operate the electric motor from a Bonner servo, which meant that this motor could only run in one direction. Stan Calmy rigged the electric motor with a set of gears to the level wind device from a fishing reel. This was linked to the exhaust baffle. By holding third position for varying lengths of time we could get any rpm that we wanted. The exhaust baffle was set for a maximum rpm of 7200. At this speed the engine would not quit due to overheating. Maximum rpm's with a Grish nylon 11-4 prop was 9500.

To conform to the FAI wing loading rule (16.38 ozs. per square foot), we added a lower wing to "Big Breathless," thus making it into a sesqui-plane.

For the radio we used Orbit single-channel equipment. We found that the receiver drain was so small that a single hearing aid 22½ volt battery and one pencell would operate the receiver continuously for well over five hours.

On April 15th, after several previous days delay, we were ready for the attempt. We all met at Los Angeles Model Airport at 5:15 a.m., then began the final count-

Red tape involved with any FAI attempt. AMA director, Russ Nichols, left; Keith Storey, camera; and Johnny Brodbeck, K & B fill in.

Glick and Willard and record model. Small lower wing added to keep wing loading within FAI restrictions. Little wing helped take-off.

Four balloon tanks held 60 ozs. Glow .19 had a Smurthwaite exhaust-stack sliding restrictor.

down in preparation for the flight. We checked the radio, then wound up the escapement with 2200 turns. About 1700 of those turns would be usable. Then we put in 46 ozs. of fuel. We were shooting for just 4½ hours. The Russian record was 3 hours, 6 minutes, but we knew that Dr. Gobeaux, of Belgium, had entered a claim of 4 hours, 27 minutes. We wanted to break that by at least 2%.

The first take-off attempt was unsuccessful. The runway at the Los Angeles Model Airport is only 200 feet long, so we were using the dirt road leading into the airport, since the airplane needed about 300 feet to become airborne. Fortunately, on the first attempt no damage was done when the airplane ran off the runway and nosed up. Had one of the fuel tanks burst we would have been through, because we had not had time to prepare a set of spare tanks. On the second attempt lady luck smiled. A gentle breeze blew directly down the road and the airplane became air-borne in 209 feet.

I had pre-set "Big Breathless" to fly in a wide (*Continued on page* 38)

Small stool made convenient jig for loading the fuel tanks. Fuel consumption about 10 ozs./hr.

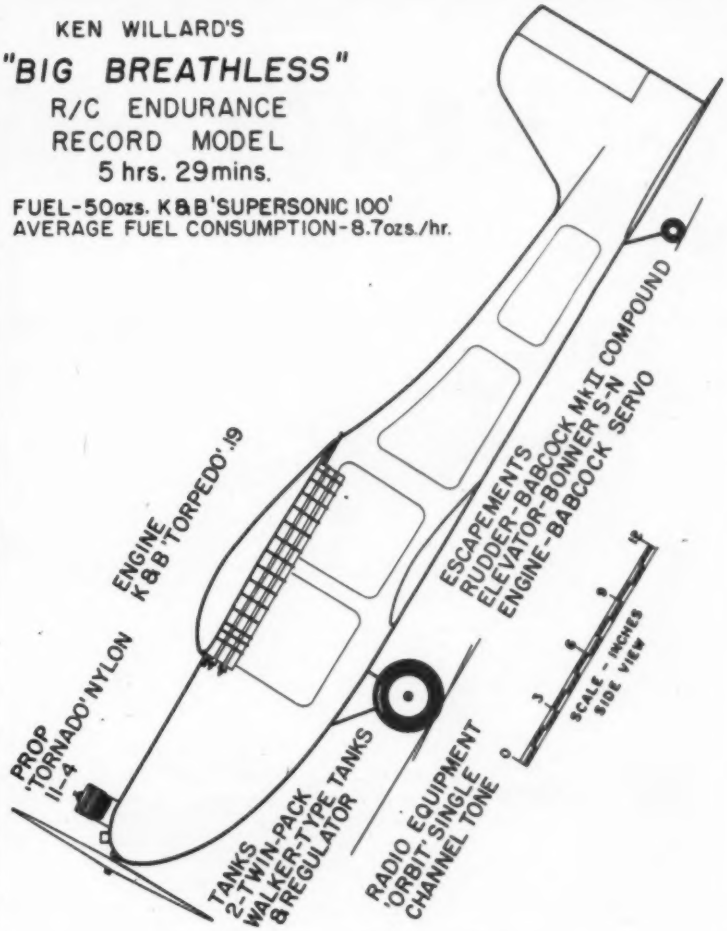
KEN WILLARD'S

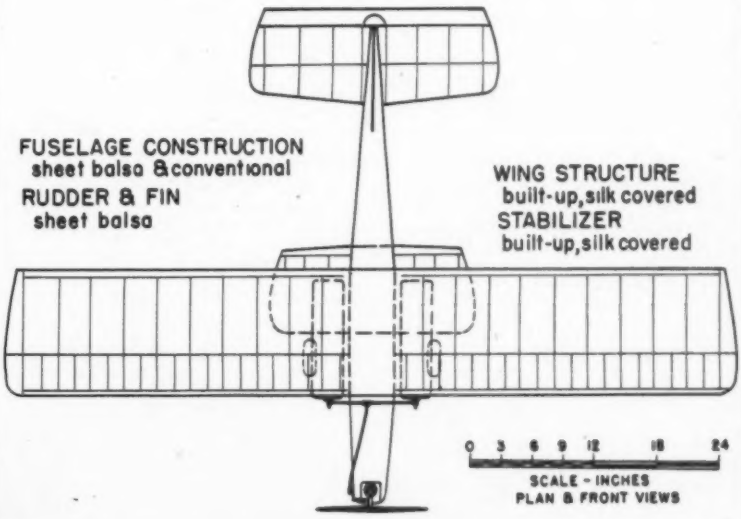
"BIG BREATHLESS"

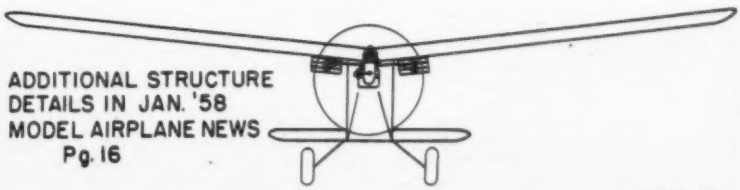
R/C ENDURANCE RECORD MODEL

5 hrs. 29 mins.

FUEL-50ozs. K&B 'SUPERSONIC 100'
AVERAGE FUEL CONSUMPTION-8.7ozs./hr.


ENGINE K&B 'TORPEDO' .19
PROP 'TORNADO' NYLON 11-4
TANKS 2-TWIN-PACK WALKER-TYPE TANKS & REGULATOR
RADIO EQUIPMENT 'ORBIT' SINGLE CHANNEL TONE
ESCAPEMENTS RUDDER-BABCOCK MkII COMPOUND ELEVATOR-BONNER S-N ENGINE-BABCOCK SERVO
SCALE - INCHES SIDE VIEW





ADDITIONAL STRUCTURE DETAILS IN JAN. '58 MODEL AIRPLANE NEWS Pg. 16

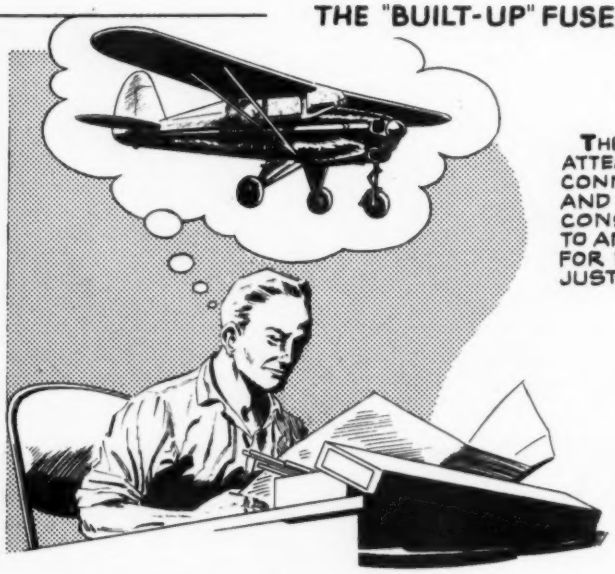
Ed Kuhn

HANDY HINTS

FOR THE MODEL BUILDER

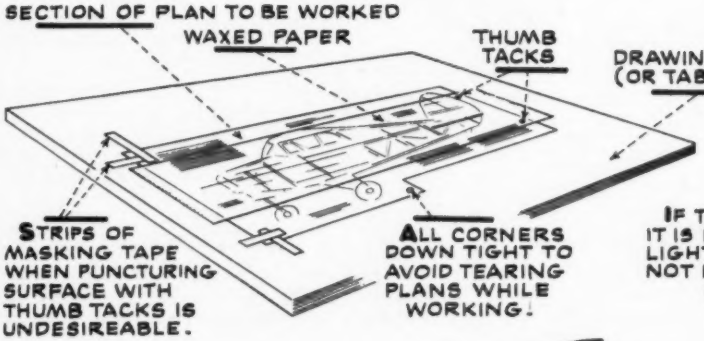
by HARRY WILLIAMSON & STAN CAMPBELL

THE "BUILT-UP" FUSELAGE



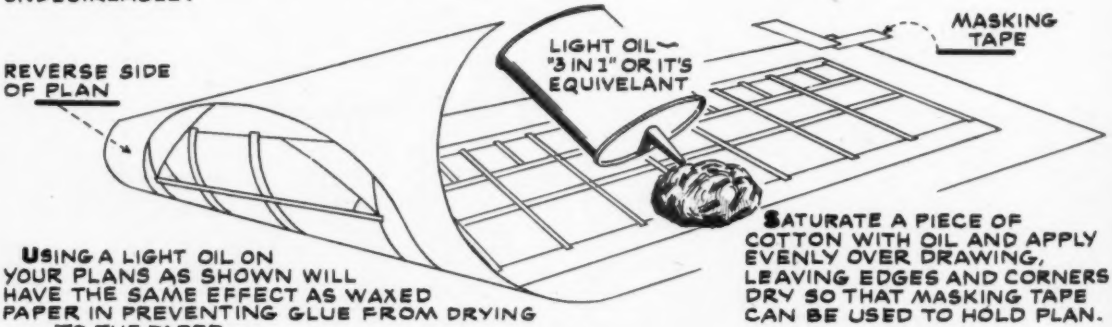
THE FIRST TWO ARTICLES OF THIS SERIES HAVE ATTEMPTED TO PRESENT A FEW BASIC PRINCIPLES CONNECTED WITH WORKING BALSA SHEET, STRIPS, AND BLOCKS. NOW LET'S CONSIDER SOME CONSTRUCTION IDEAS WHICH MAY BE APPLIED TO ANY "BUILT-UP" MODEL, WHETHER INTENDED FOR FREE FLIGHT, CONTROL LINES, RADIO OR JUST PLAIN DISPLAY.

IF YOUR WORK TABLE IS ONE THAT YOU CAN DRIVE PINS INTO, YOU CAN SETTLE DOWN TO WORK WITH NO WORRIES, BUT IF IT HAS A SURFACE YOU DON'T WANT TO DAMAGE IT WILL BE BEST TO WORK THE MODEL ON A LARGE DRAWING BOARD, FIRST MAKING SURE THAT WHICHEVER SURFACE YOU USE IS ABSOLUTELY LEVEL.


SECTION OF PLAN TO BE WORKED
WAXED PAPER
THUMB TACKS
DRAWING BOARD (OR TABLE TOP)
STRIPS OF MASKING TAPE WHEN PUNCTURING SURFACE WITH THUMB TACKS IS UNDESIREABLE.
ALL CORNERS DOWN TIGHT TO AVOID TEARING PLANS WHILE WORKING!

MAKE SURE PLAN IS FLAT AND ALL FOLDS PULLED OUT BEFORE WORKING.

IF THUMB TACKS ARE TO BE AVOIDED, IT IS BETTER TO TREAT PLAN WITH LIGHT OIL SINCE MASKING TAPE WILL NOT HOLD WAXED PAPER TIGHT. (SEE BELOW.)

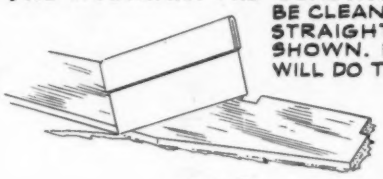


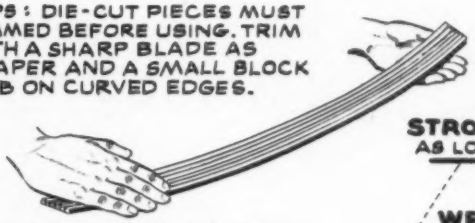
USING A LIGHT OIL ON YOUR PLANS AS SHOWN WILL HAVE THE SAME EFFECT AS WAXED PAPER IN PREVENTING GLUE FROM DRYING TO THE PAPER.

SATURATE A PIECE OF COTTON WITH OIL AND APPLY EVENLY OVER DRAWING, LEAVING EDGES AND CORNERS DRY SO THAT MASKING TAPE CAN BE USED TO HOLD PLAN.

THIS METHOD IS ALSO USEFUL WHEN ONLY ONE HALF OF A WING IS DRAWN. PLANS BECOME TRANSPARENT, ALLOWING YOU TO FLIP THEM OVER TO BUILD THE SECTION THAT IS NOT SHOWN.

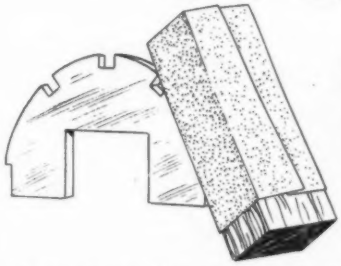
TWO IMPORTANT PRE-CONSTRUCTION STEPS: DIE-CUT PIECES MUST BE CLEANED AND TRIMMED BEFORE USING. TRIM STRAIGHT EDGES WITH A SHARP BLADE AS SHOWN. FINE SANDPAPER AND A SMALL BLOCK WILL DO THE BEST JOB ON CURVED EDGES.





STRONG. USE AS LONGERON.

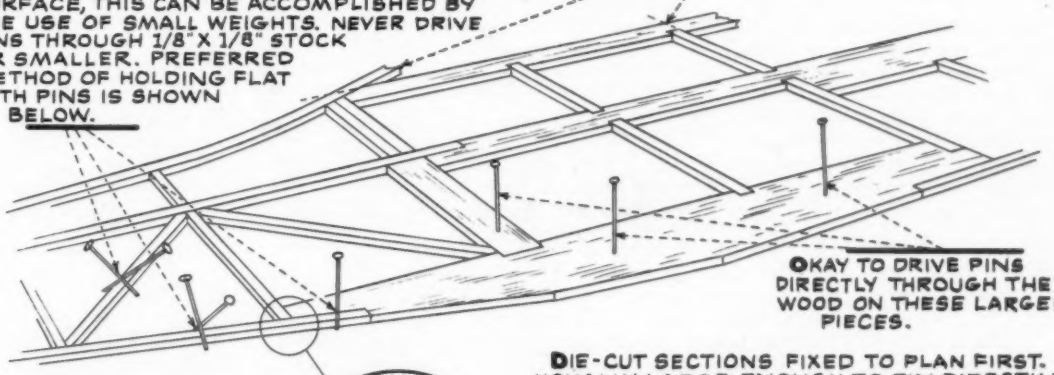
WEAK. USE IN SHORT LENGTHS AS UPRIGHTS.



TEST ALL LONGERONS FOR UNIFORM STRENGTH AS ILLUSTRATED. LONGERONS OF UNEVEN STRENGTH WILL RESULT IN THE FUSELAGE WARPING TO ONE SIDE OR THE OTHER DURING FINAL ASSEMBLY OF FRAMEWORK.

IN INITIAL BUILDING STAGES, ALL WOOD MUST BE KEPT FLAT ON THE PLAN UNTIL GLUE IS DRY TO INSURE TRUE CONSTRUCTION. IF PINS CANNOT BE USE ON YOUR WORK SURFACE, THIS CAN BE ACCOMPLISHED BY THE USE OF SMALL WEIGHTS. NEVER DRIVE PINS THROUGH 1/8" X 1/8" STOCK OR SMALLER. PREFERRED METHOD OF HOLDING FLAT WITH PINS IS SHOWN BELOW.

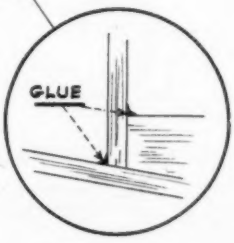
ALLOW EXTENSION FOR BUILDING EASE. TRIM AFTER GLUE IS DRY.



OKAY TO DRIVE PINS DIRECTLY THROUGH THE WOOD ON THESE LARGER PIECES.

DIE-CUT SECTIONS FIXED TO PLAN FIRST. USUALLY LARGE ENOUGH TO PIN DIRECTLY TO PLAN. LONGERONS, ETC, GLUED INTO PLACE LATER.

CORRECTLY CUT AND CLEANLY FITTED JOINTS AS ILLUSTRATED INSURE MAXIMUM STRENGTH AND CONSTRUCTION THAT IS TRUE TO PLANS. ALLOW A SLIGHT GLUE "FILLET" AT ALL JOINTS AS SHOWN AT RIGHT.

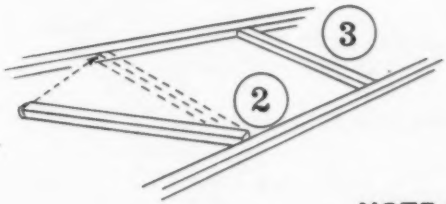


CROSS THE ENDS OF LONGERON STOCK WITH A RAZOR BLADE BEFORE FORMING GLUED JOINT.

A GOOD GLUED JOINT IS MADE AS FOLLOWS:

1. APPLY SMALL BEAD OF CEMENT TO EACH END OF UPRIGHT.

2. TOUCH EACH END IN TURN TO UPPER AND LOWER LONGERONS, THUS DEPOSITING A SMALL AMOUNT OF CEMENT ON THEM.



3. PRESS UPRIGHT INTO PLACE, MAKING SURE IT FITS SNUGLY AND ANGLE OF ENDS CORRESPONDS TO ANGLE OF LONGERONS.

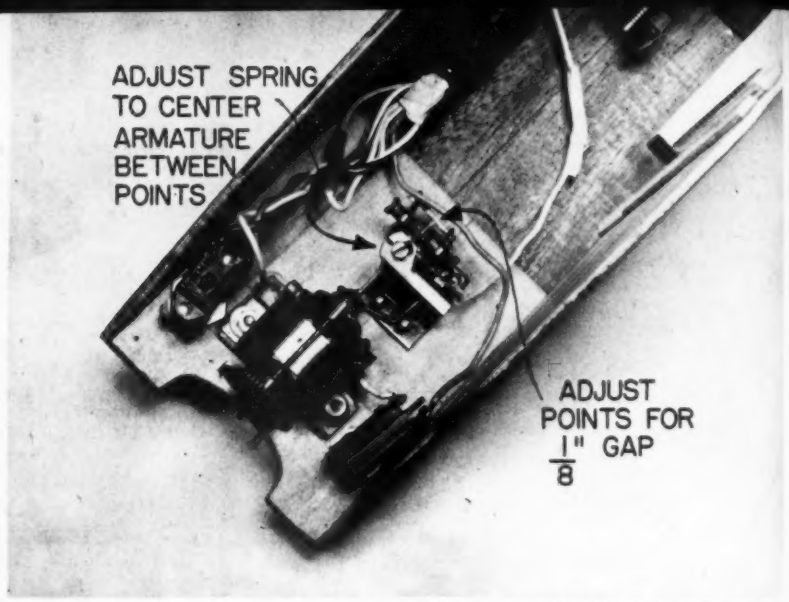
NOTE: IF MAXIMUM STRENGTH IS MORE IMPORTANT THAN BUILDING SPEED, BE SURE TO PRE-GLUE ALL JOINTS. (ALLOW COAT OF GLUE TO DRY BEFORE RE-GLUING TO FORM JOINT.)

simpl-simul

by JOHN WORTH

Part 3

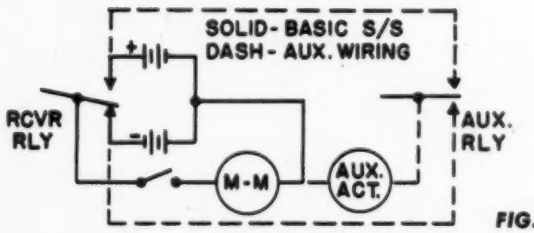
Inexpensive dual proportional control makes you a pilot with true "joy stick."



Trigger switch (Sigma minus coil), Carny's model, trips by actuator crank, to work the motor control actuator. Note the brass beef-up band over the actuator. System now quite reliable.

► The Simpl/Simul control system not only provides independent and simultaneous proportional control of rudder and elevators with single channel, but also is adaptable to the addition of other controls. Since the S/S system normally operates through variation of constantly pulsed signals, a momentary interruption of those signals can be used to trigger an escapement or other device. The trigger method used may be mechanical or electronic. The former seems simpler and therefore preferable but is trickier to get working reliably. Both, however, have been successfully used. In either case, the interruption of signals results in momentary full deflection of either or both control surfaces, but the time interval is so brief—only about a half second—that practically no lag is noticeable and model reaction is minimized.

Mechanical trigger: This method requires removal of the stops that are normally used to limit travel of the crank on the control surface torque rod. Instead, actuator centering tension is balanced against actuator voltage and the system's lowest pulse rate (approx. 3 cps) so that despite full-up elevator and full-power rudder signals the crank will not swing beyond its normal 270 degrees total rotation. Then, upon a momentary solid signal, the crank drives beyond limits (*Continued on page* 39)



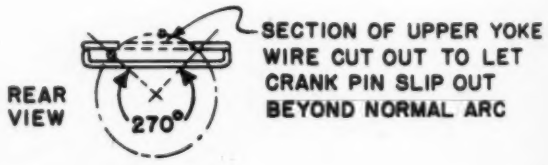


FIG. 1. AUXILIARY CONTROL HOOK-UP

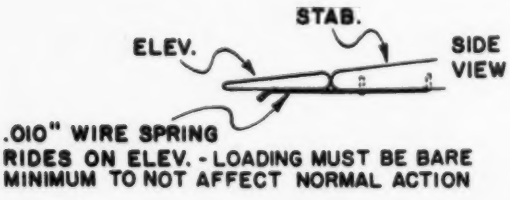


FIG. 2. FAIL-SAFE ELEVATOR DETAILS

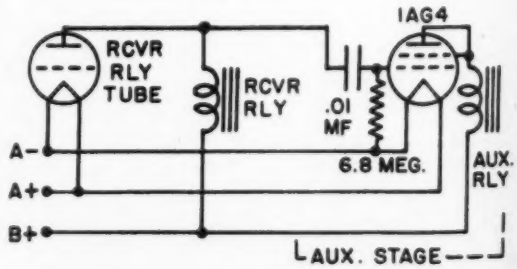


FIG. 3. ELECTRONIC TRIGGER

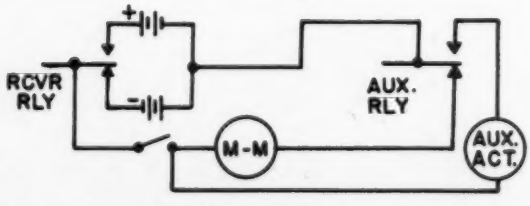


FIG. 4. F-S CONTROL HOOK-UP

AUXILIARY CONTROLS

Pleased as punch with daddy's "real" airplane, young lady appropriated it as her own, winds it up and makes take-offs like a veteran. No prop to carve—hobby shops stock (or should) them.

The real Bebe-Jodel is nothing more than a big gas model. Tip-hedral, tail areas are altered.

BEBE-JODEL

by GERALD R. ZEIGENFUSE

It's rubber-powered. It's simple. It flies. For a beginner with a yen for scale, for the experienced modeler who appreciates sport flying, this cute French home-built light-plane makes astonishing good subject. And inexpensive.

► The Bebe-Jodel is a single-seat French light plane of only 23 feet span. It uses a converted Volkswagen engine for power and can do over 90 MPH. Its proportions are almost perfect for modeling and this has been proven by the snappy performance of the model. It appeared six years ago as a three view in the April, 1952, issue of MAN and has been a favorite of the author ever since.

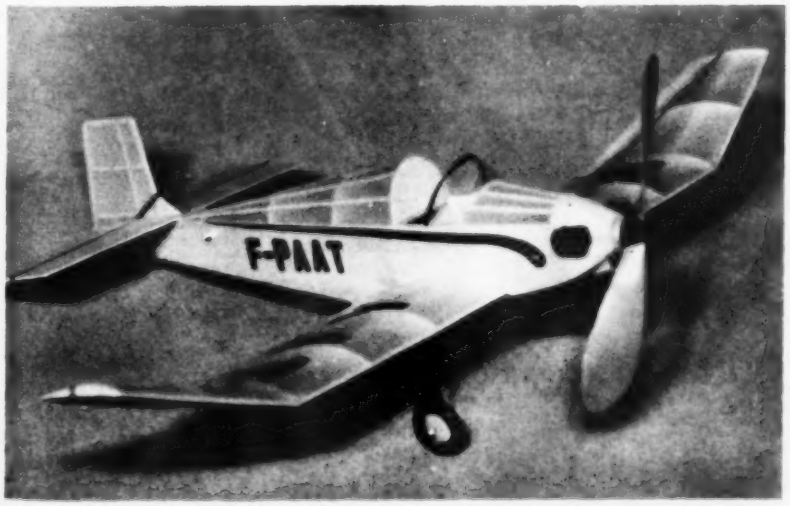
It is presented at a scale of ¾" = 1'-0" with the usual modifications for good flying. Namely, enlarged tail surfaces, slightly increased dihedral, and a lengthened landing gear to provide ground clearance for the 6" dia. plastic prop, which is easily obtained at any hobby shop. This model makes an ideal subject for the beginner and will give excellent performance if a reasonable amount of care is taken during construction. Since full-size plans have been provided you can get right down to business.

First, carefully remove the plans from the magazine and tape or cement them together. Check with a ruler or straight edge to see that both halves are lined up. The centerline of the fuselage is a good reference line. Let's begin by building the fuselage.

Cut out the 1/32" sheet fuselage sides. Trace the outline from the plan directly onto the wood by using carbon paper or you may prefer to use the pin prick method. To do this, place the wood under the plan and stick a pin through the plan every so often around the outline. Then trace around the pin pricks with a razor blade or modeling knife, using a straight edge as a guide, to obtain a perfect fuselage side. Use this side as a pattern and cut out a duplicate. Cement in place the 1/16" sq. uprights and the 1/32" sheet doubler at the rear motor hook location.

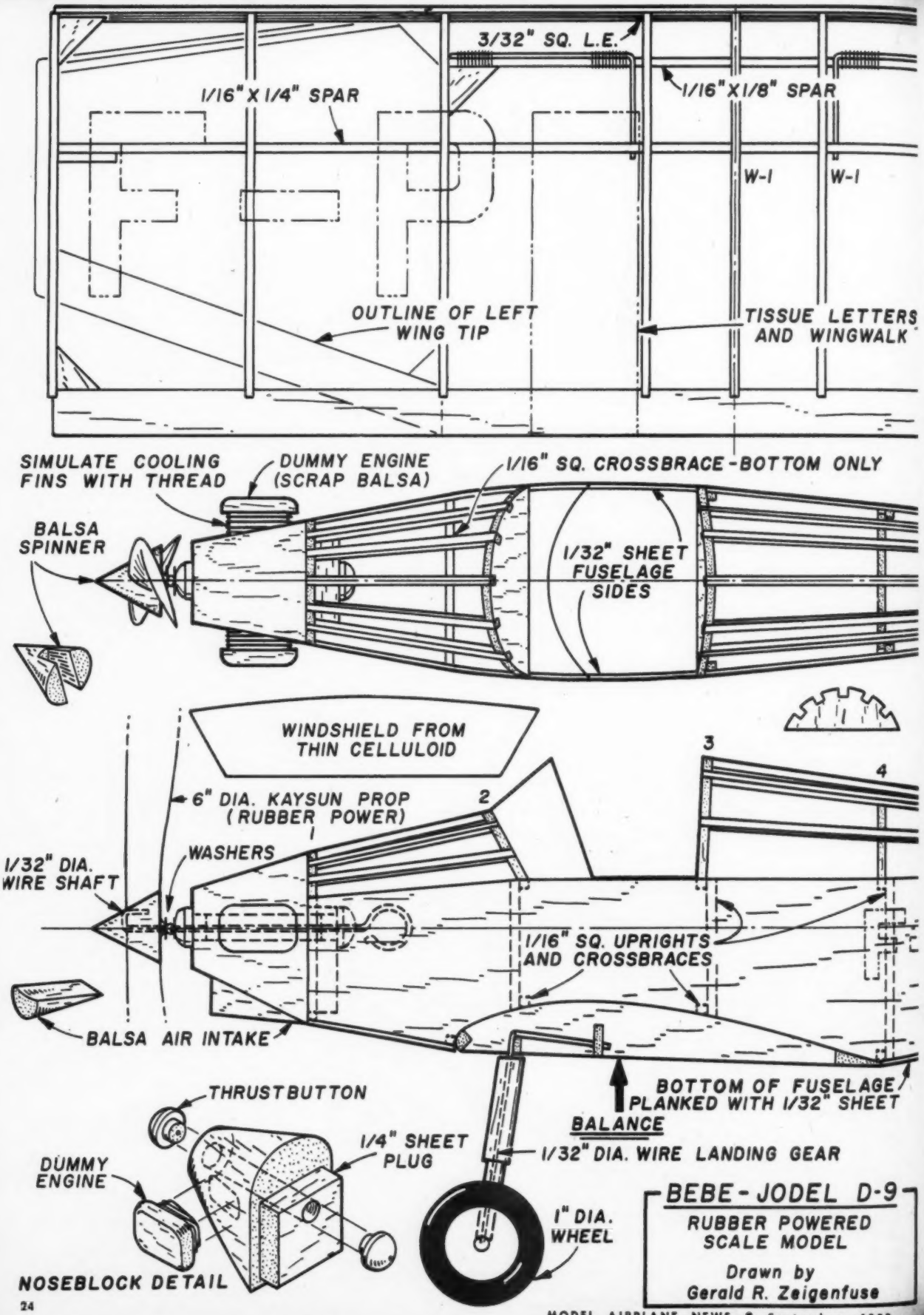
To assemble the sides, cut 1/16" sq. cross braces for the front and rear of the cockpit and cement them in place, making sure that the fuselage sides are straight and square. Let the cement set for about one half hour and then pull the fuselage sides together at the rear and cement. Cement all the crossbraces in place from the cockpit rearward. Then, pull the sides together at the nose and cement the nose crosspieces in place. A small rubber band wrapped around the nose will hold it together until the cement dries.

The next step is to cut out all the bulkheads from 1/16" sheet and cement them in place as shown on the plan. Cement in place the 1/16" sq. stringers on (*Continued on page* 44)



Ready for action. For lightness, essential in a model like this, colored tissue was used. Markings are made by cutting French license numbers from black tissue and then doping them in place.

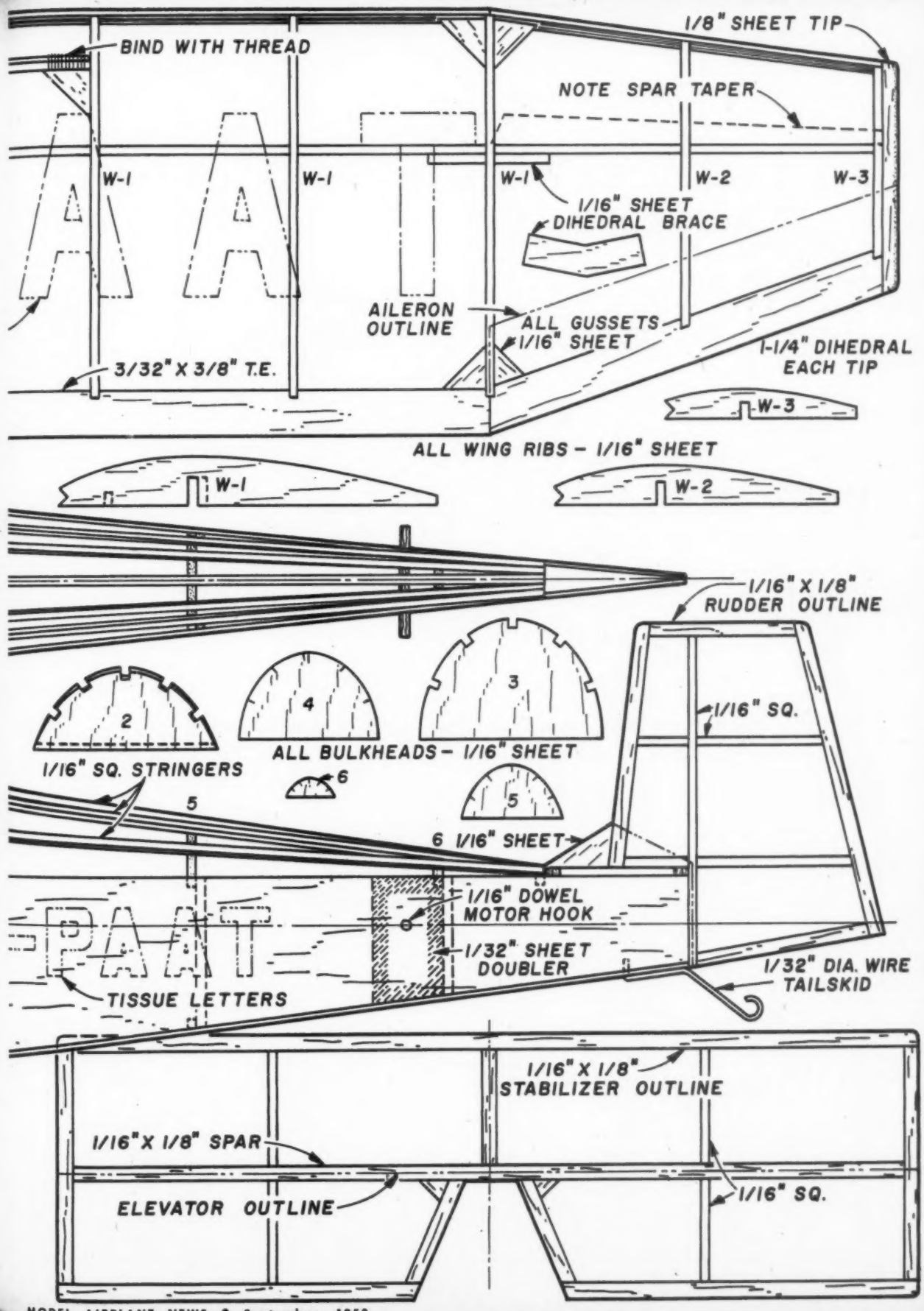
Actual Size Plans on Next Two Pages



BEBE-JODEL D-9

RUBBER POWERED SCALE MODEL

Drawn by Gerald R. Zeigenfuse


1/8" SHEET TIP
BIND WITH THREAD
NOTE SPAR TAPER
W-1
W-1
W-1
W-2
W-3
1/16" SHEET
DIHEDRAL BRACE
AILERON
OUTLINE
ALL GUSSETS
1/16" SHEET
1-1/4" DIHEDRAL
EACH TIP
3/32" X 3/8" T.E.
W-3
ALL WING RIBS - 1/16" SHEET
W-1
W-2
1/16" X 1/8"
RUDDER OUTLINE
2
4
3
1/16" SQ.
ALL BULKHEADS - 1/16" SHEET
1/16" SQ. STRINGERS
6
5
5
6 1/16" SHEET
1/16" DOWEL
MOTOR HOOK
1/32" SHEET
DOUBLER
1/32" DIA. WIRE
TAILSKID
TISSUE LETTERS
1/16" X 1/8"
STABILIZER OUTLINE
1/16" X 1/8" SPAR
ELEVATOR OUTLINE
1/16" SQ.

LOENING AMPHIBIONS by Willis L. Nye. Among the more unusual and interesting service

LOENING OA-2 AERODYNAMIC SURFACE AREAS	
TOTAL SUPPORTING SURFACE	504.20 SQ FT
UPPER WING INCLUDING CENTER SECTION	247.30 " "
CENTER SECTION	12.00 " "
LOWER WING	244.50 " "
ELEVATORS(2) EACH	14.55 " "
HORIZONTAL STABILIZER	37.9 " "
VERTICAL STABILIZER	14.9 " "
RUDDER	20.2 " "
AILERONS(4) EACH	15.00 " "

PHOTOGRAPHIC EQUIPMENT

THE CAMERA MOUNT IS LOCATED IN THE LOWER OF THE REAR COCKPIT, BELOW THE FLOOR. VARIOUS TYPES OF AIR CORPS CAMERAS COULD BE INSTALLED. TO PERMIT CAMERA OPERATION, A WATERPROOF CAMERA HATCH COVER IS REMOVED FROM THE BOTTOM OF THE HULL. A VIEW FINDER HATCH IS ALSO PROVIDED. THE ELECTRICAL CONNECTION TO ENERGIZE THE INTERVALOMETER IS LOCATED ON THE LEFT SIDE OF THE FUSELAGE. THE INTERVALOMETER MOUNT IS LOCATED ON REAR PEDAL BRACE TUBE. NO PROVISION WAS MADE FOR OBLIQUE PHOTOGRAPH CAMERA EQUIPMENT.

CONSTRUCTION DATA-FUSELAGE

THE COMBINATION OF ALUMINUM ALLOY SKIN OVER A WOODEN FUSELAGE AND AN ALUMINUM ALLOY HULL IS AFFECTED BY THE VAPOR DENSITY OF THE SURROUNDING ATMOSPHERE. WHEN THE AIRPLANE IS FLOWN IN A DRY CLIMATE, THE WOODEN STRUCTURE WILL CONTRACT AND WRINKLES WILL SHOW IN FUSELAGE SIDE SKIN. OPERATION IN DAMP CLIMATE OR ON WATER WILL CAUSE WRINKLES TO DISAPPEAR.

AIRPLANE COLORS	
HULL-FUSELAGE	OLIVE DRAB
WINGS	ORANGE
TAIL SURFACES	ORANGE
PROPELLER	ALUMINUM
TIRES	BLACK
WHEELS	ALUMINUM
STRUTS	OLIVE DRAB
INSIGNIA	RED, WHITE, BLUE
WING TIP FLOAT	OLIVE DRAB

WEIGHT DATA OA-2	
WEIGHT EMPTY	3841 LBS.
USEFUL LOAD	1573 "
ARMAMENT	247 "
AIRCREW	360 "
FUEL	540 "
OIL	72 "
GROSS WEIGHT	5414 "

INTERBAY BRACE WIRES ARE IN THE PLANE OF THE FRONT AND REAR WING SPARS. ADJUSTABLE END FITTINGS.

SINGLE SWAGED WIRE BRACING
GROUND FULL THROTTLE 1700 R.P.M.
PROPELLER BLADE ANGLE 13.5° AT 42" RADIUS
ADJUSTABLE HORIZONTAL STABILIZER

ENGINE OIL COOLER

DOUBLE SWAGED FLYING WIRES
SINGLE SWAGED LANDING WIRES

NARROW STRUT
NAVIGATION LIGHT
WIDE STRUT
TIE
PONTOON
SKID
AILERON ACTUATING STRUT
AILERON HORN

AILERON MOVEMENT 20° PLUS AND MINUS
AILERONS WERE INTERCHANGEABLE BETWEEN RIGHT AND LEFT WINGS

PROPELLER DIAMETER 9'-2"
STREAMLINE STRUT BRACE
MANUALLY ACTUATED LANDING GEAR RETRACTS INTO HULL

COMPRESSION STRUT
BUNGEE CORD
AEROL SHOCK STRUT
CANTED WHEEL
BRACE STRUT
TOWING LUG
3° DIHEDRAL ANGLE
3° ANGLE OF INCIDENCE

ALUMINUM ALLOY WING TIP PONTOON

THE WING TRUSS WAS INDETERMINATE OF THE PRATT DESIGN. WING SPARS WERE BRACED BY DOUBLE FLYING WIRES AND SINGLE LANDING WIRE TO SUPPORT WING LOADS. INTERPLANE STRUTS WERE STREAMLINE STEEL STRUTS.

32X6 HEAVY RIM WHEEL
36X8 HIGH PRESSURE TIRE (55 LBS P.S.I.)
ALUMINUM ALLOY MULTI-FUSELAGE STRUCTURE INTERNALLY AND EXTERNALLY STIFFENED
KEEL

STEEL SPOKE WIRE WHEEL
LANDING GEAR LINKAGE
AXLE FAIRING

THE INSTRUMENTS OF THE OA-2 WERE BASICALLY THE SAME AS THE OA-1C EXCEPT OF IMPROVED DESIGN. THE AIRSPEED VENTURI IS LOCATED ADJACENT TO COCKPIT ON OUTSIDE OF FUSELAGE. (RIGHT SIDE)

WING SPAN 540"

TREAD 92

SPAN SCALE
264 252 240 228 216 204 192 180 168 156 144 132 120 108 96 84 72 60 48 36 24 12 0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264

HEIGHT
144 132 120 108 96 84 72 60 48 36 24 12

SIGNAL EQUIPMENT

A VERY TYPE SIGNAL PISTOL AND HOLDER IS ATTACHED TO RIGHT AND LEFT SIDE OF REAR COCKPIT. 30 ROUNDS OF AMMUNITION ARE SUPPLIED.

BOMBING EQUIPMENT

AN A-3 TYPE BOMB RACK IS MOUNTED UNDER EACH LOWER WING. FOUR 25 LB. FRAGMENTATION BOMBS WERE CARRIED. RELEASE AND ARMING WERE CONTROLLED BY THE PILOT.

OA-2 RADIO EQUIPMENT

RADIO EQUIPMENT CONSISTS OF CONTROL BOXES BC-113 AND 115 IN REAR COCKPIT. TRANSMITTER BC-120, RADIO FREQUENCY AMPLIFIER BC-116, AND FILAMENT BATTERIES ARE ATTACHED TO FUSELAGE BETWEEN TWO COCKPITS. DYNAMOTOR IS IN THE HULL ADJACENT TO FIREWALL. ANTENNA REEL AND DRUM ARE ATTACHED TO LEFT SIDE AFT COCKPIT. INTERPHONE SET, SCR-167, LOCATED IN AFT COCKPIT. JACK MOUNT IS LOCATED IN PILOT COCKPIT.

TOW TARGET OA-2

PROVISION IS MADE FOR INSTALLATION OF TOW TARGET REEL TYPE C-3 IN AFT COCKPIT. THIS INSTALLATION REQUIRED MODIFICATION.

WING TIP PONTOONS OA-2

WING TIP PONTOONS ARE INTERCHANGEABLE. THEY ARE ATTACHED TO THE LOWER WINGS BY BOLTS THROUGH FITTINGS AT THE OUTBOARD INTERPLANE STRUTS.

V-1460 VEE
480 H.P. V-12 IN-LINE AIRCOOLED CURTISS-WRIGHT ENGINE INVERTED TYPE
REMOVABLE COWLING

LOUVERS
INERTIA STARTER SHAFT
AIR EDUCTION EXIT
OIL FILLER
ENGINE MOUNT

WING STAGGER IS 12". STAGGER AND WING INCIDENCE ARE FIXED BY POSITION OF CENTER SECTION CABANE STRUTS.

BOTTOM OF FUSELAGE PROVIDED WITH WATER DRAIN HOLES AND ALSO HAND HOLE ACCESS HOLES. THE HULL IS PROVIDED WITH A BILGE PUMP.

NO EMERGENCY EXTENSION OF THE LANDING GEAR WAS POSSIBLE IF THE MANUAL EXTENSION MECHANISM FAILED. HOWEVER, THIS AIRPLANE COULD BE LANDED ON THE HULL WITHOUT DANGER TO THE AIRCREW WITH THE WHEELS RETRACTED.

LOENING 10A AIRFOIL
AILERON ACTUATING STRUT
PLEXIGLAS WINDSHIELD
AFT M.G. RING FOR 30-CAL. (DUAL) M.G. CLIP
M.G. HULL GUARD
M.G. MOUNT
FLAT DECK

3-BLADE ALUMINUM ALLOY GROUND ADJUSTABLE PITCH PROPELLER

THRUST LINE

RUBBER BUMPER
AIR INDUCTION FOR COOLING ENGINE
42 CARBURETOR HEATER EXHAUST STREAMLINE STEEL STRUT
ALUMINUM ALLOY SKIN
MOORING BIT
STEP

KEEL
CHINE
EXTERNAL STIFFENERS
BRACE STRUT

STRAP TYPE BRONZE BUSHED HINGE
AERODYNAMIC RUDDER BALANCE
ALUMINUM ALLOY COVERING
NAVIGATION LIGHT

ALUMINUM ALLOY COVERING (WOOD FRAMEWORK)
U.S.A.C. MODEL DESIGNATION
MANUFACTURER'S NAME
HORIZONTAL ADJUSTABLE STABILIZER 0-5° (NORMAL SETTING-2° PLUS)
ELEVATOR ARC OF OPERATION PLUS 25° MINUS 20°
RUDDER ARC OF OPERATION 30° OFF C.L. R. OR L.
STREAMLINE STEEL STRUT
U.S.A.C. MARKINGS
RED
WHITE
BLUE

MOORING RING
RUDDER CONTROL HORN
RUDDER CONTROL CABLE
RIVETED LAP JOINTS
ELEVATOR CONTROL CABLE
AFT FAIRING

PIVOT
W.L.

THE TAIL SKID ON OA-2 IS SAME AS USED ON OA-1C

TIP FLOAT
MOORING RING
FILLER STRIP (SPRUCE)
CHINE
KEEL
EXTERNAL STIFFENER

STEP
ALUMINUM FAIRING
RUBBER DISC SHOCK ABSORBER
STEEL TUBE TAIL SKID
HARDENED TAIL SKID SHOE
DOLLY LOOP

MAIN BULKHEAD
LANDING GEAR MANUALLY OPERATED AIR VALVE

HULL IS SUBDIVIDED INTO SIX COMPARTMENTS BY WATERTIGHT COMPARTMENT

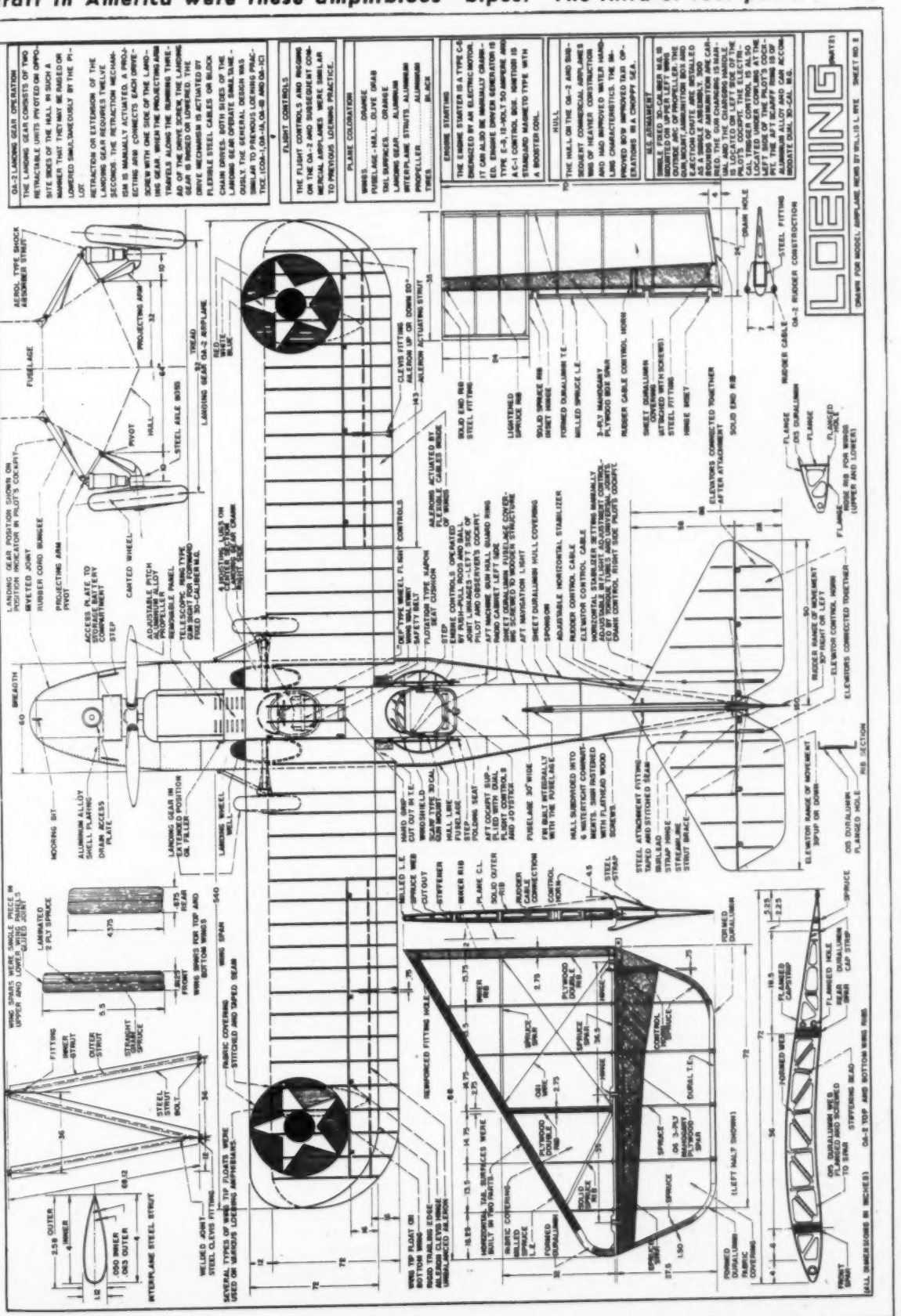
(ALL DIMENSIONS IN INCHES)
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 344 356 368 380 392 404 416

ALTHOUGH THIS AIRPLANE IS CALLED THE KEYSTONE OA-2 AND BUILT BY THE KEYSTONE AIRCRAFT CORPORATION OF BRISTOL, PENNSYLVANIA, SUCCESSOR TO THE LOENING ORGANIZATION, IT WAS BASICALLY AN IMPROVED OA-1C LOENING AMPHIBIAN. THIS AIRPLANE HAD AN IMPROVED PERFORMANCE AND RANGE OVER PREVIOUS PLANES. THE MAJOR CHANGES WERE ENLARGED FUSELAGE, NEW TAIL, AND NEW ENGINE INSTALLATION. EIGHT PLANES OF THIS TYPE WERE BUILT FOR THE ARMY AIR CORPS PLUS ONE EXPERIMENTAL PROTOTYPE. (XO-10)

LOENING (PART 2.)

DRAWN BY WILLIS L. NYE FOR MODEL AIRPLANE NEWS-SHEET NO. 1

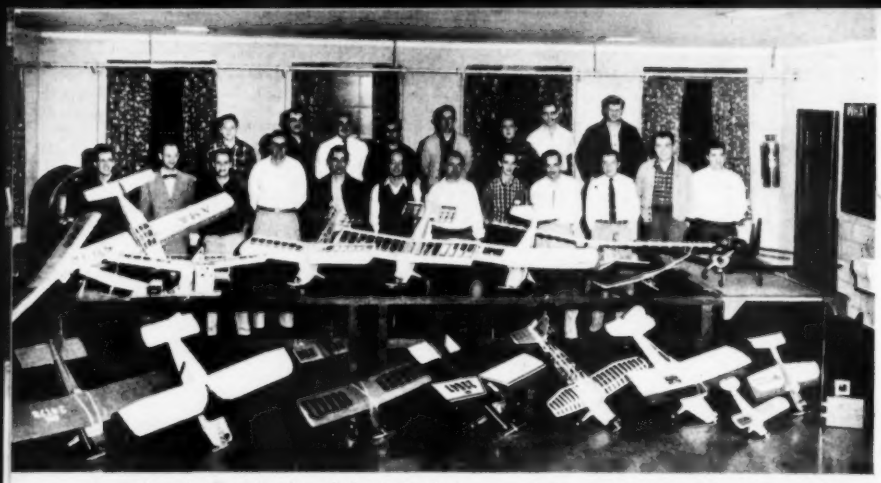
aircraft in America were these amphibious "bipes." The third of four parts.


LOENING (PART II)
DRAWN FOR MODEL AIRPLANE NEWS BY WILLIS L. BYE SHEET NO. 2
OA-2 LANDING GEAR OPERATION
FLIGHT CONTROLS
HULL
TAIL ASSEMBLY
ENGINE STARTING
PLANE COLORATION
WINGS ..... ORANGE
FUSELAGE - HULL ..... OLIVE DRAB
TAIL SURFACES ..... ORANGE
LANDING GEAR ..... ALUMINUM
INTERPLANE STRUTS ..... ALUMINUM
PROPELLER ..... BLACK
TIRES ..... BLACK
AERO. TYPE SHOCK ABSORBER STRUT
FUSELAGE
PROJECTING ARM
PIVOT
HULL
STEEL AXLE BOSS
TREAD
LANDING GEAR OA-2 AIRPLANE
CASTED WHEEL
RUBBER CORD BUNGEE
RIVETED JOINT
LANDING GEAR POSITION INDICATOR IN PILOT'S COCKPIT
ACCESS PLATE TO STORAGE BATTERY COMPARTMENT
STEP
ADJUSTABLE PITCH PROPELLER
TELESCOPIC RING TYPE STREAMLINE WIRE BRACING
FIXED 30-CALIBER M.G.
BREATH
MOORING BIT
ALUMINUM ALLOY SHELL PLATING
DRAIN ACCESS PLATE
LANDING GEAR IN LOCKED POSITION
OIL FILLER
LANDING WHEEL WELL
WING SPAN
FABRIC COVERING STITCHED AND TAPED GEAR
WING SPARS WERE SINGLE PIECE IN UPPER AND LOWER WING PANELS
LAMINATED 2 PLY SPRUCE
FITTING INNER STRUT
OUTER STRUT
STREAMLINE SPRUCE
STEEL STRUT BOLT
WELDED JOINT
STEEL CLEVIS FITTING
INTERPLANE STEEL STRUT
SEVERAL TYPES OF WING TIP FLOATS WERE USED ON VARIOUS LOENING AIRPLANES
WING TIP FLOAT OR BOTTOM WING
ROD TRAILING EDGE
AILERON CLEVIS HINGE
UNBALANCED AILERON
REINFORCED FITTING HOLE
HORIZONTAL TAIL SURFACES WERE BUILT IN TWO PARTS
RIBS
FABRIC COVERING
WELDED STEEL TUBE
FORMED DURALUMIN
SPRUCE
PLYWOOD DOUBLE RIB
SPRUCE SPAR
SOLID SPRUCE RIB
SPRUCE SPAR
OA 3-PLY PLYWOOD SPAR
SPRUCE
SPRUCE
SPRUCE
FORMED DURALUMIN
FABRIC COVERING
(LEFT HALF SHOWN)
DURAL T.E.
CONTROL HORN SPRUCE
HINGE
FLANGED CAPSTRIP
FLANGED HOLE
REAR CAP STRIP
SPRUCE
FORMED WEB
STIFFENING BEAD
FRONT SPAR
(ALL DIMENSIONS IN INCHES)
OA-2 TOP AND BOTTOM WING RIBS
RIB SECTION
FLANGED HOLE
FLANGED CAPSTRIP
REAR CAP STRIP
DURALUMIN WEB RIVETED TO SPAR
FORMED DURALUMIN
SPRUCE
FLANGED HOLE
FLANGED CAPSTRIP
REAR CAP STRIP
DURALUMIN WEB RIVETED TO SPAR
STIFFENING BEAD
FRONT SPAR
(ALL DIMENSIONS IN INCHES)
OA-2 TOP AND BOTTOM WING RIBS
RIB SECTION
DEPTH WHEEL FLIGHT CONTROLS
WINDSHIELD
SAFETY BELT
FLOTATION TYPE KAPOK SEAT CUSHION
STEP
AILERON CONTROLS OPERATED BY PUSH-PULL RODS AND BALL JOINT LINKAGES - LEFT SIDE OF PILOT AND OBSERVER'S COCKPIT
AFT COCKPIT SUPPLIED WITH DUAL FLIGHT CONTROLS AND JOYSTICK
FUSELAGE 30" WIDE
FRI BALE INTERNALLY WITH THE FUSELAGE
HULL SUBDIVIDED INTO 6 WATERTIGHT COMPARTMENTS RASTERED WITH FLATHEAD WOOD SCREWS
STEEL ATTACHMENT FITTING TAPED AND STITCHED GEAR
BAILEAD
STRAP HINGE
STREAMLINE STRUT BRACE
STEEL STRAP
RUDDER CABLE CONNECTION
CONTROL HORN
SOLID OUTER RIB
PLANE C.L.
INNER RIB
STRINGER
CUT OUT
SPRUCE WEB
WELDED L.E.
HAND GRIP CUT OUT IN T.E.
WINDSHIELD
SPECIAL GUN MOUNT
HULL LINE
FUSELAGE STEP
PILOTS SEAT
AFT COCKPIT SUPPLIED WITH DUAL FLIGHT CONTROLS AND JOYSTICK
FUSELAGE 30" WIDE
FRI BALE INTERNALLY WITH THE FUSELAGE
HULL SUBDIVIDED INTO 6 WATERTIGHT COMPARTMENTS RASTERED WITH FLATHEAD WOOD SCREWS
STEEL ATTACHMENT FITTING TAPED AND STITCHED GEAR
BAILEAD
STRAP HINGE
STREAMLINE STRUT BRACE
STEEL STRAP
RUDDER CABLE CONNECTION
CONTROL HORN
SOLID OUTER RIB
PLANE C.L.
INNER RIB
STRINGER
CUT OUT
SPRUCE WEB
WELDED L.E.
HAND GRIP CUT OUT IN T.E.
WINDSHIELD
SPECIAL GUN MOUNT
HULL LINE
FUSELAGE STEP
PILOTS SEAT
AFT COCKPIT SUPPLIED WITH DUAL FLIGHT CONTROLS AND JOYSTICK
AFT NAVIGATION LIGHT
SPONSON
ADJUSTABLE HORIZONTAL STABILIZER
RUDDER CONTROL CABLE
ELEVATOR CONTROL CABLE
HORIZONTAL STABILIZER SETTING MANUALLY ADJUSTABLE BY LIGHT ADJUSTMENT CONTROL - DUAL CONTROL RIGHT SIDE PILOT'S COCKPIT
SOLID SPRUCE RIB
SHEET DURALUMIN HULL COVERING
FUSELAGE - HULL FUSELAGE COVERING SHEET DURALUMIN SCREWED TO WOODEN STRUCTURE
LIGHTENED SPRUCE RIB
SOLID SPRUCE RIB
RIVET HINGE
FORMED DURALUMIN T.E.
MILLED SPRUCE L.E.
3-PLY MAHOGANY PLYWOOD BOX SPAR
RUBBER CABLE CONTROL HORN
SHEET DURALUMIN (RIVETED AND SCREWED WITH SCREWS)
STEEL FITTING
HINGE RIVET
ELEVATORS CONNECTED TOGETHER
AFTER ATTACHMENT
SOLID END RIB
SOLID END RIB
STEEL FITTING
HINGE RIVET
ELEVATORS CONNECTED TOGETHER
AFTER ATTACHMENT
SOLID END RIB
RUDDER CABLE
OA-2 RUDDER CONSTRUCTION
STEEL FITTING
DRAIN HOLE
FLANGE
DS DURALUMIN
FLANGE
FLANGED HOLE FOR WIRES (UPPER AND LOWER)
RUDDER RANGE OF MOVEMENT 30° RIGHT OR LEFT
ELEVATOR CONTROL HORN
ELEVATORS CONNECTED TOGETHER
ELEVATOR RANGE OF MOVEMENT 30° UP OR DOWN
DS DURALUMIN
FLANGED HOLE
RIB SECTION
CLEVIS FITTING
ALILERON ACTUATING STRUT
AILERONS ACTUATED BY FLEXIBLE CABLES WIRE
OA-2 LANDING GEAR OPERATION
THE LANDING GEAR CONSISTS OF TWO RETRACTABLE UNITS PIVOTED ON OPPOSITE SIDES OF THE HULL IN SUCH A MANNER THAT THEY MAY BE RAISED OR LOWERED SIMULTANEOUSLY BY THE PILOT.
RETRACTION OR EXTENSION OF THE LANDING GEAR REQUIRES TWELVE SECONDS. THE RETRACTION MECHANISM IS MANUALLY ACTUATED. A PROJECTING ARM CONNECTS EACH DRIVE-SCREW WITH ONE SIDE OF THE LANDING GEAR. WHEN THE PROJECTING ARMS TRAVELS ALONG THE RUNNING THREAD OF THE DRIVE SCREW, THE LANDING GEAR IS RAISED OR LOWERED. THE DRIVE MECHANISM IS ACTUATED BY FLEXIBLE STEEL CABLES OR BLOCK CHAIN DRIVES. BOTH SIDES OF THE LANDING GEAR OPERATE SIMULTANEOUSLY. THE GENERAL DESIGN WAS SIMILAR TO PREVIOUS LOENING PRACTICE. (CON-1, OA-1A, OA-9 AND OA-10)
FLIGHT CONTROLS
THE FLIGHT CONTROLS AND RIGGING ON THE OA-2 AND SUBSEQUENT COMMERCIAL AIRPLANES WERE SIMILAR TO PREVIOUS LOENING PRACTICE.
HULL
THE HULL ON THE OA-2 AND SUBSEQUENT COMMERCIAL AIRPLANES WAS OF HEAVIER CONSTRUCTION AND HAD IMPROVED WATER HANDLING CHARACTERISTICS. THE IMPROVED BOW IMPROVED TAXI OPERATIONS IN A CHOPPY SEA.
TAIL ASSEMBLY
SINGLE FIXED 30-CALIBER MACHINE GUN MOUNTED ON UPPER LEFT WING OUTBOARD PANEL OF PROPELLER ARC. THE GUN IS FITTED WITH AN AUTOMATIC EJECTION CHUTE ARE INSTALLED AS A SINGLE ASSEMBLY. 300 ROUNDS OF AMMUNITION ARE CARRIED IN A BOX LOCATED ON LEFT SIDE OF THE PILOT'S COCKPIT. THE GUN TRIGGER CONTROL IS ALSO LOCATED UNDER COMPLAINT AT THE LEFT SIDE OF THE PILOT'S COCKPIT. THE BARREL IS OF CHROME NICKEL MOLYBDENUM ALLOY AND CAN RECOMMODATE DUAL 30-CAL. M.G.
ENGINE STARTING
THE ENGINE STARTER IS A TYPE CA ENERGIZED BY AN ELECTRIC MOTOR. IT CAN ALSO BE MANUALLY CRANKED. ENGINE DRIVEN GENERATOR IS TYPE E-9, 12-VOLT 50 AMPERE AND A C-1 CONTROL BOX. IGNITION IS STANDARD MAGNETO TYPE WITH A BOOSTER COIL.

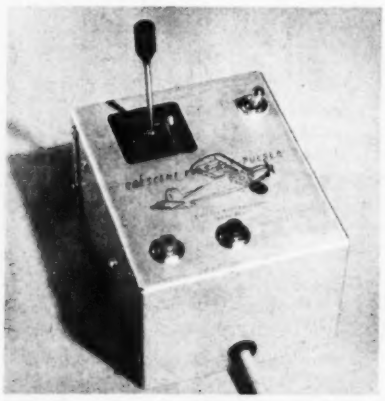
RADIO CONTROL NEWS

by EDWARD J. LORENZ

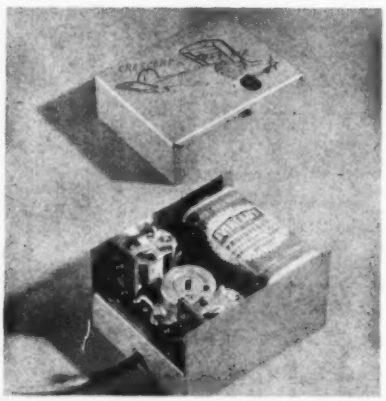
The most widely read, widely read RC column. Even the editor understands it. Sold?

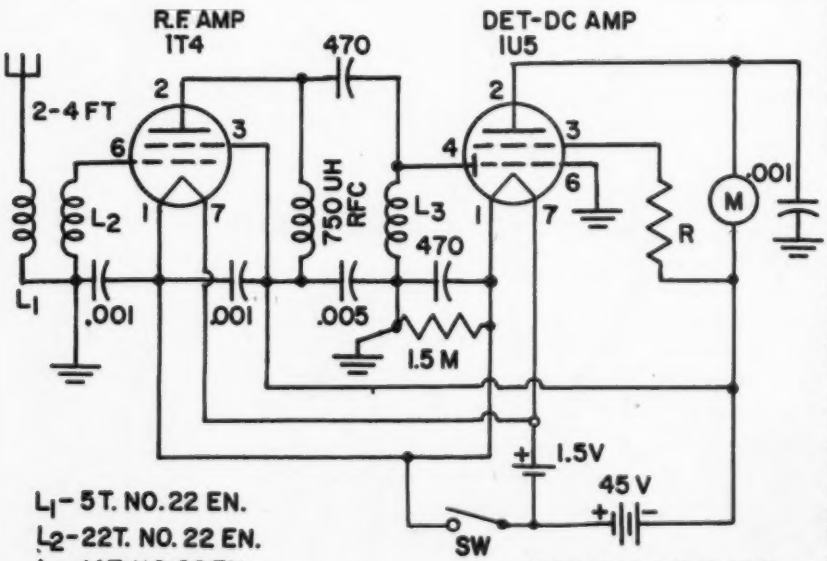


Meet the active membership of the Radio Modelers of Baltimore. Abandoned airport within the city limits makes this outfit the envy of east coast. How many of the crates can you identify?



Mechanical pulser by Glass City Model Electronics, controllable for 2-14 pps, has complete linearity with no interaction. Right — transistorized pulse width/rate device. Dual, proper.





L_1 - 5T. NO. 22 EN.
L_2 - 22T. NO. 22 EN.
L_3 - 14T. NO. 20 EN.
ALL COILS CLOSE WOUND ON NATIONAL XR50 FORMS.
M - 0-500 UA METER
R - VALUE TO BRING METER TO FULL SCALE.

Fig. 4

L_1 WOUND OVER GND END OF L_2, SEPARATED BY A LAYER OF SCOTCH TAPE.

TECHNICAL TOPICS

► By the time you read this, several attempts at the RC endurance and distance records will have been made. Back in April, Ken Willard took the endurance record with 5 hours 29 minutes and was thinking of chasing his job up, or down, the California coast in a motor boat in a distance attempt. The east coast has at least four major duration projects under way. Winter issues should provide valuable information for record trys in '59.

• • •

Photos show top and bottom view of a 3-channel, simultaneous-proportional receiver by CG Electronics. CG will probably market a single and dual proportional unit, with the 3-channel set being a custom built model. Count them, 25 transistors! This type of control does not give a flapping surface, follows the ground control to any amount of deflection. Being tested by CG and some of the west coast fliers, this system still needs a little development work on it before it hits the market.

• • •

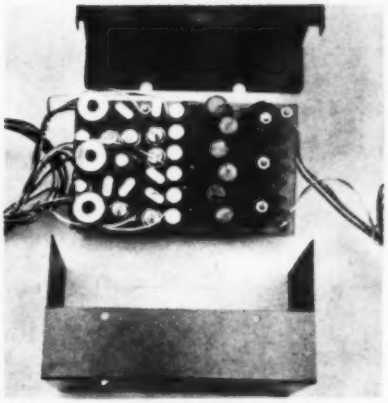
Many times we give circuits in this column which are not full fledged construction articles. In many cases letters want to know why the performance is not as stated. As mentioned before, these circuits are given for informative purposes and, in general, are not for the novice. Sometimes the builder fails to use the designated part, makes changes on his own, changes the physical layout or just fails to wire it properly. Each circuit presented is studied carefully and if there is the slightest doubt as to it being readily built and placed in operation, several models are built and tested. In many cases as many as six to eight units are built, either by the writer or by other RC builders. The designer or builders name is given for each circuit presented, and it is preferred that all inquiries be made direct to that person, in care of MAN, to save you time and to get the desired information first hand.

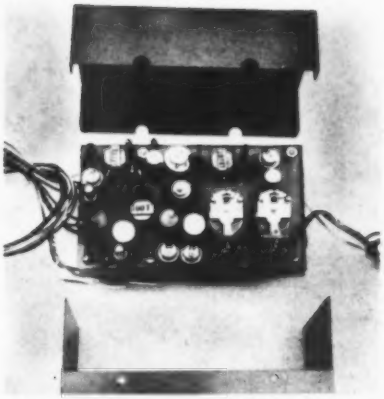
Just to clear up inquiries on rudder-only flying, the official scoop from the AMA: Rudder only. No controls other than those for the rudder and engine are permitted, excluding such controls as steerable wheels and brakes. Rudder class equipment. The receiver in a Rudder Class plane must be of the single-channel type, either on-off CW *or* on-off of a single audio tone.

And re Pylon Racers: During an official flight attempt, a Pylon Racer must land undamaged (other than a broken prop and/or minor abrasions which would not affect its flying ability) for its flight to be termed official and be counted. Better this should apply to other flying as well, thus preventing the picking up of spot landing points when the model is intentionally dived in!

• • •

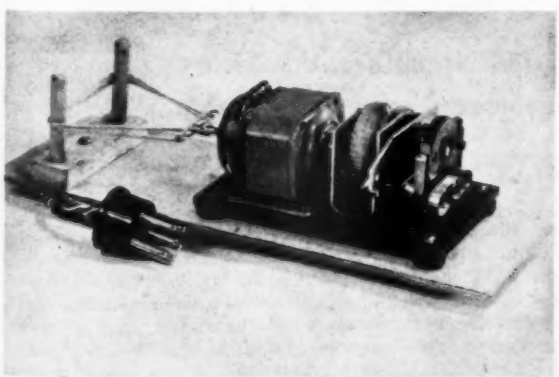
Fig. 4 shows a logarithmic field-strength meter, by John Gouge, 5419 Patton Terrace, Falls Church, Va., given in the DC/RC Newsletter. A good FSM will tell you what you are putting out from the antenna and the reading given does not necessarily coincide with the brightness of a lamp bulb and loop held near the tank coil. You may burn out a 2w lamp bulb at the tank coil and yet fail to put out a small fraction of that power due to inefficient and improper antenna adjustment. This unit is recommended only to those builders who have the equipment to align the tuning coils (a grid-dip meter). While alignment can be made otherwise, the use of a grid-dip meter will make things easier and give you less of a chance to say something is wrong when it doesn't work right off. Any convenient layout may be used as long as RF stage is stable. Do not permit floppy components, loose tube sockets, etc. A grounded metal shield should be placed across the tube socket of the 1T4, between the grid and plate. Use a tube socket with a grounded center pin connection, solder shield to this and then to chassis ground. Following are a few precautions to be observed when using a FSM: Pick-up antenna and transmitter antenna should be polarized, that is, both should be vertical etc., not one horizontal and the other vertical; the measurements should be made several wavelengths away from the antenna being tested (a wavelength being about); the pick-up antenna should be no longer than is necessary to obtain readings. If the two antennas are the same length, there may be a tendency for the two to couple enough to give false readings; the FSM should be of the logarithmic type as the crystal detector type tends to be "square law." That is, the meter reading will be proportional to the square of the RF voltage and will tend to exaggerate the effect of small changes in the antenna system giv- (*Continued on page* 53)



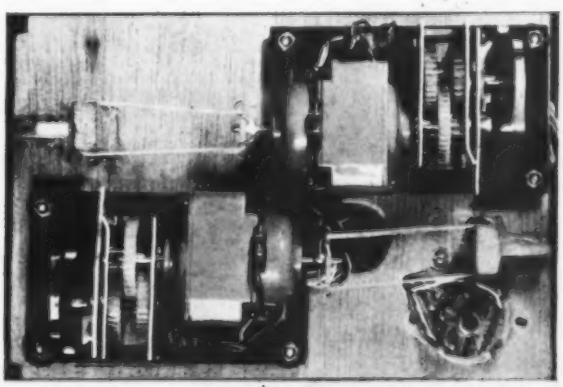


Under development, CG, 3-channel, simultaneous, proportional, custom built. Expects to produce single, and dual pulse sets too. Pix show custom-built job. It has 23 transistors—count 'em.

Babcock's 37-in., all-plastic Tri-Pacer, for radio control, takes away your excuse for having no time to build. For power, this amazing craft packs right along on any .049. Preformed parts.

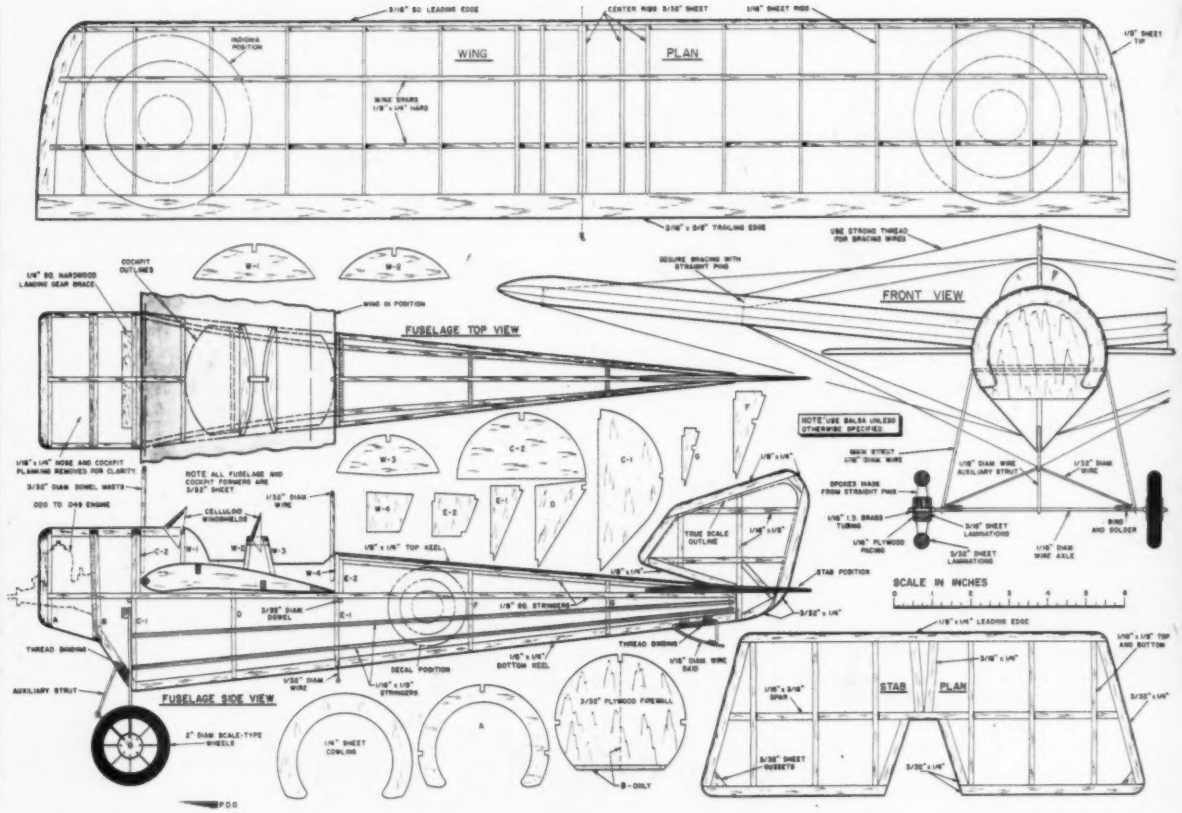


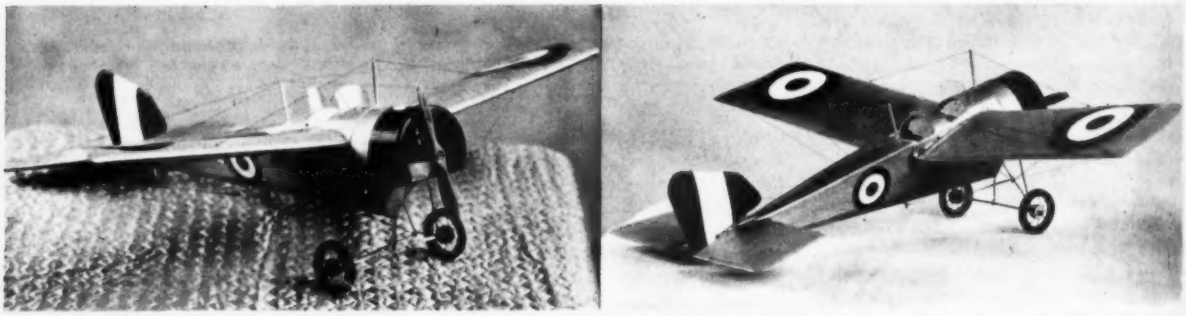
Tomoser's proportional actuator, nylon gears, self-centering, has phosphor-bronze contacts. Only 300 mils, 4½v, and a 4-lb. thrust.



For the ultra guys who fly Wag dual, Tomoser recommends this installation on a slide tray. Pulse actuators are really coming along.

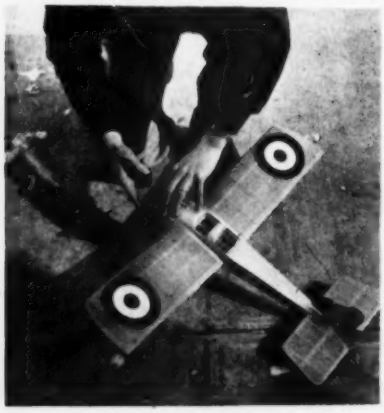
FULL SIZE PLANS AVAILABLE. SEE PAGE 60





The R.E.P. of 1914 was an advanced design for its day. Color was all silver with a red cowl. French red-and-white rudder stripes shown.

Model a nice size for carrying in one piece. A ¾ in. equals 1 ft. scale, for 28½ in. span.



French Oldtimer

Designed for Half A engines, this historic aircraft makes a splendid sport job for that .02!

by DALE MUNYON

► The 1914 French R.E.P. is one of those old-timer airplanes that scales down to model size with a minimum of changes, and still retains good flight characteristics. The model shown here is scale except for slight enlargement of the rudder and the aft section of fuselage lengthened one inch for stability.

The model is ¾" scale, giving a span of 28½ inches and effective wing area of approximately 135 square inches. It retains enough detail to satisfy most scale fans, but is still rugged enough for every day flying.

Construction is not difficult and is best started by laying out top and bottom keels of ⅛ x ¼ medium hard balsa; cement half formers in place with exception of C-Top, W-1, W-2, W-3, and W-4 (these will be added to wing center section). Add the ¼" square stringer running full (*Continued on page* 52)

NEW . . . ½A SCALE CONTROLINE

Fokker D-7

FAMOUS WORLD WAR I GERMAN FIGHTER

This exciting new scale model will recapture all the thrills of the fabulous World War I Aviation Age. Fully shaped, aluminum cowling, large authentic color decal insignia. **For all small engines .020 .049 .074. Great Enterprise Value at Only $2.50**

Wingspan 17½"—Overall Length 14"

"SATIN SMOOTH" SHAPED FUSELAGE AND WINGS!

enterprise

FIRST IN THE SKIES

WHIPSAW—Combat-Stunt Controline. Pre-fabricated, Shaped leading and trailing edges, die cut ribs, plywood doublers, hardwood engine mounts, extra sturdy. For .09 .15 .19 engines. **Large 31" wingspan.** Great value at **$1.95**

SKY-LINER—Dual purpose ½ A free flight and rubber powered for sport, precision and PAA load flying. Pre-fabricated parts, formed landing gear wheels, extras. .020 to .049 engines. **Wingspan 32".** Only **$2.50**

"CHIPMUNK"—Canada's pilot trainer. Featuring aluminum cowling, plastic pilot, canopy, plastic spinner and authentic Canadian A.F. decals. For .020 .049 .074 engines. **18" wingspan** Only **$2.50**

P-40 FLYING TIGER—Giant size—super scale, easy to build controline flyer. Featuring "authenti-carved" and hollowed fuselage. For .19 to .35 engines. Wingspan 28" length 23½" **$9.95**

X-15 — Ultra modern design, "satin smooth" shaped fuselage and wing, plastic spinner and canopy, aluminum cowling, pilot. For .020 .049 .074 engines. 17" **wingspan** **$2.50**

HAWKER FURY — World Famous British Fighter - scale controline. Fully pre-fab for quick easy assembly. For .049 to .099 engines. **18" wingspan, 16" length.** only **$2.95**

MUSTANG PROFILE—Sport and combat trainer. All parts fully shaped and pre-cut. Authentic full color decals. Complete accessories. For .074 .09 - .015 engines. 21" **wingspan.** **$2.95**

CHECK-MATE — Satin smooth, fully shaped fuselage and wing. Complete kit including aluminum cowling, plastic spinner, plastic pilot and hardware accessories. **16" wing span. $2.50**

FAIRCHILD PT-19 — U.S. Army Air Force Trainer. "Satin Smooth" shaped fuselage and wings, formed gear, wheels, and full color decals. For .020 .074 engines. **18" wing span. $2.50**

SPACE TERROR—World famous "TOWLINE TERROR" redesigned for double use—with .020 engine as sport free flight — or as towline glider. **24" wingspan, 18" overall length** **$1.50**

SUPER LINER—The swell flying "Tow-Liner" now available for Pee-Wee .020 engine—or as a red hot towline glider. Completely pre-fabricated kit. **24" wingspan, 18" length.** **$1.50**

F-51 MUSTANG — One of the finest ½ A scale controliner of America's World War II fighter. Full color decals, Plastic parts, complete plans. **18" wingspan** **$1.95**

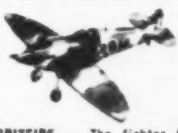
HAWKER TYPHOON — A lavish kit featuring pre-fab parts, full size detailed plans, large four color decals. For .09, .15, .19 engines. **Wingspan 31¼". Overall length 22½".** ONLY **$2.95**

L'IL DARLIN' — Super deluxe controline. With sleek, shaped fuselage, NEW recessed wing for L. G. mount. The swellest looking, sweetest flying model ever. **18" wing span** Only **$2.50**

PEE WEE SPORTSTER — Great new ½ A Free Flight. Designed for .020 to .049 engines. Can operate in limited area. **32" wingspan** **$2.50**

RAZZLE-DAZZLE — Sensational new design for terrific ½ A flying. Beautifully shaped fuselage and wing. Complete decal trim. **18" wing span** **$2.50**

F4U-5 CORSAIR — Spectacular Navy shipboard fighter recreated into a realistic scale model. **18" wing span** **$1.95**



SPITFIRE — The fighter that saved England from destruction. A beautiful miniature scale controline authentically recreated with loads of detail. **18" wingspan** **$1.95**

CURTISS HAWK P6-E — Famous Army Air Force pursuit plane of 1930's. A fabulous kit of a great Biplane. Authentic full color decals. Pefect for .020 engines. **14" wingspan** **$1.29**

SPAD — Eddie Rickenbacker's famous World War I fighter; This great "Bipe" will please anyone. Complete authentic decal insignia. Perfect for .020 eng. **14" wingspan** **$1.50**

CATAMARAN CRUISER — Water thrills galore with this unique model. The twin 26" hulls skim at 50 m.p.h. .020 - .074 Eng. Great value at only **$2.95**

F6-F HELLCAT—Miniature controline of plane Navy says was the world's most maneuverable—watch how it flies! **18" wing span** **$1.95**

HOWARD "IKE"—Most famous of American Air Racers. Winner of Shell Trophy. Completely pre-fabricated. Best flying model in the Enterprise scale model line. **18" wingspan** **$1.95**

ENTERPRISE MODELS, INC. MINEOLA, NEW YORK

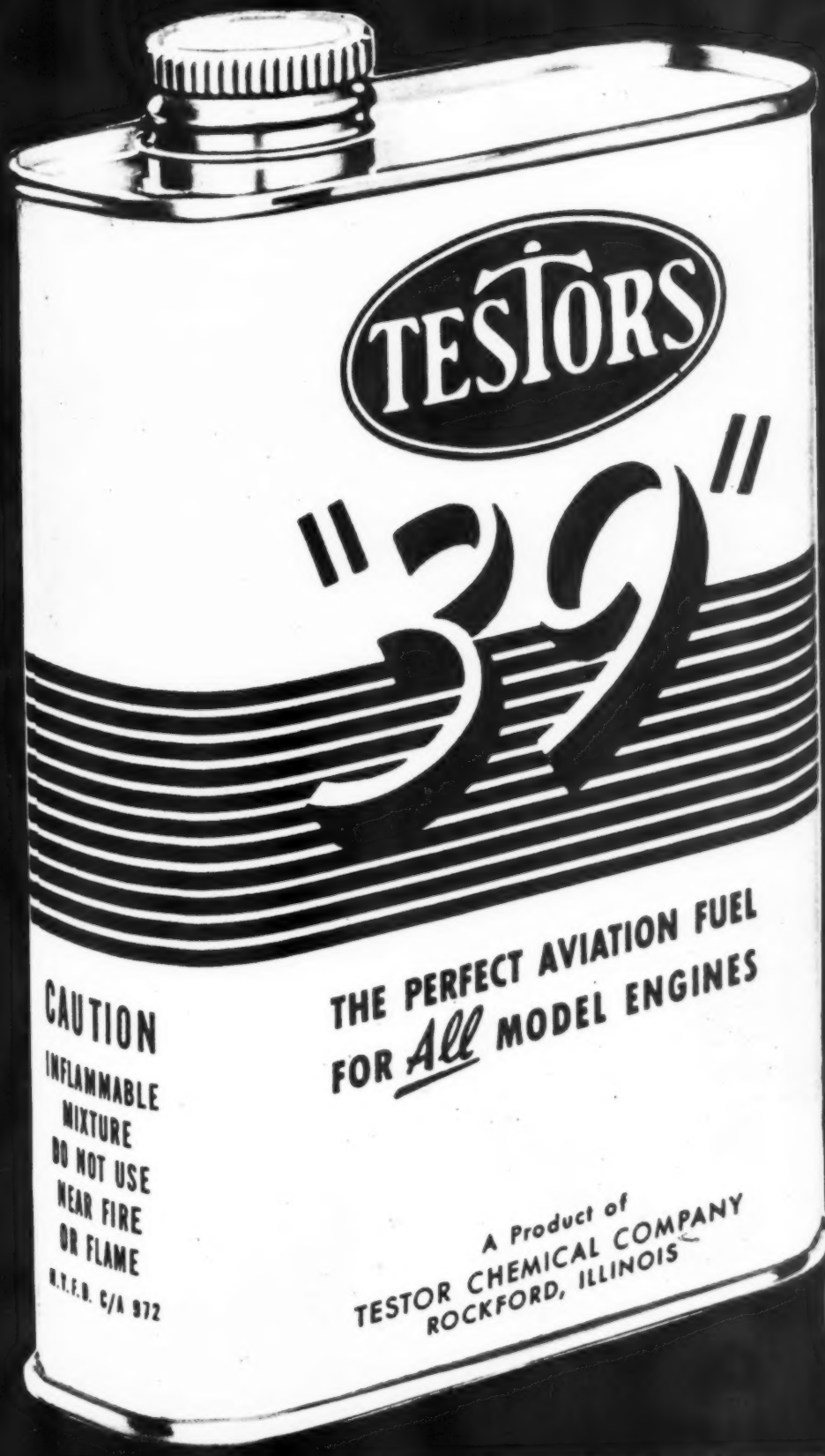
If no local dealer is convenient, mail orders will be filled by ENTERPRISE MODEL AIRCRAFT, DEPT. M-98 MINEOLA, NEW YORK. PLEASE INCLUDE 25c packing and postage.

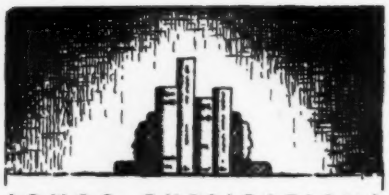
BIG

...IN POWER
...IN PERFORMANCE
...IN PROTECTION FOR YOUR ENGINE

Here at Testor's we have coined the word "POWER-*FORMANCE*" to describe — in part — what you give your engine when you use our "39" fuel. It is a meaningful word, and one that modelers all over the country have accepted. Why? Because they've proved to their own satisfaction that they do get *more power* and *better all-around performance* from their engines with Testor's "39". You, too, should see for yourself on any basis of comparison you choose. Check Testor's "39" for easy starting . . . all-weather performance . . . power output . . . quality and quantity of lubrication. You'll agree, we are sure, that it does make flying more fun . . . gives you the dependable operation you want under every flight condition. It's a safe fuel, too . . . formulated to protect your engine and insure you more hours of enjoyable, satisfying flying time. Get "39" now. You'll find this outstanding all-purpose fuel in the familiar red, yellow, and blue cans at dealers everywhere . . .

ANOTHER PREFERRED PRODUCT OF TESTORS **THE TESTOR CORPORATION • ROCKFORD, ILLINOIS**


TESTORS
"30"
CAUTION
INFLAMMABLE
MIXTURE
DO NOT USE
NEAR FIRE
OR FLAME
A.T.F.D. C/A 972
THE PERFECT AVIATION FUEL
FOR All MODEL ENGINES
A Product of
TESTOR CHEMICAL COMPANY
ROCKFORD, ILLINOIS
¼ PINT 25¢
½ PINT 50¢
PINT 85¢
QUART $1.50



LONGO PUBLICATIONS

The Standard of Quality, Accuracy, and Interest for the Aeronautical Publishing Industry.

All books bearing the "LONGO" name assure you of the finest publications available. *Longo leads, others follow.*

OPERATION GRASSHOPPER
by Dario Politella.....$4.95

In the annuls of publishing there have been a great many pages of manuscript dedicated to preserving the feats of war-time aviation. When reviewing this multitude of material, there is a startling lack of information about the unsung hero of the foot soldier: Army Aviation. The Grasshopper airplane was vital to the artillery support of the infantry.

OPERATION GRASSHOPPER is the first book ever published to record the Army Aviator's story. From the Foreword by General Mark W. Clark to the final photo in the book, the full story of the Army's Air War in Korea is told in its entirety.

The more than 200 pages of OPERATION GRASSHOPPER are liberally illustrated. The book is supplemented with a 3-plate set of detailed drawings of the main hero of the book, the L-19A "Bird Dog."

Don't miss this story of the Army Aviator in Korea; a vital link in the recorded history of our soldiers of the air.

THE FORD STORY
by William T. Larkins.....$7.95

A pictorial history of the Ford Tri-Motor, THE FORD STORY has been hailed by many as the most profound work of its type ever presented. This book, the most remarkable work of this century, completely records the birth of the Ford through the Stout model 1-AT, the growth of Ford airplanes through the 14 models built, and their longevity through the complete history of the 11 Fords still flying.

THE GEE BEE STORY
by Charles G. Mandrake.....$4.95

Charles G. Mandrake, generally accepted by many as the leading authority on air racing, has accumulated the fabulous story of the Gee Bee's in one of the finest narratives ever published concerning the "Golden Age" of aviation; the early and mid thirties. This book, already in its second printing, tells the story of the rise and fall of the Gee Bee organization and its many planes. The true story of the death of Lowell Bayles is recounted as it happened. The story also recounts how fabulously bad luck plagued these airplanes and finally earned for them an undeserved reputation as "killers." THE GEE BEE STORY is a must for all interested in aviation of yesteryear.

U. S. CIVIL & MILITARY AIRCRAFT FOR 1958
Prepared by the publisher.....$2.95

A complete listing of every airplane to be built or sold in the United States during 1958, this book is a necessary addition to the tools of the aircraft salesman, the aircraft enthusiast, the pilot, and the collector. Complete specifications and performance data is given as well as photos of each airplane.

Order from your local bookseller or direct from the publisher. Sorry, no COD's, please.

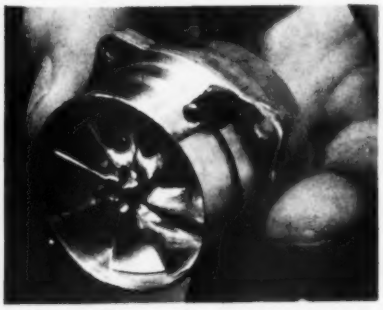
THE ROBERT R. LONGO COMPANY, INC.
1318 Beaumont Drive Wichita 4, Kansas

Faster than Fast

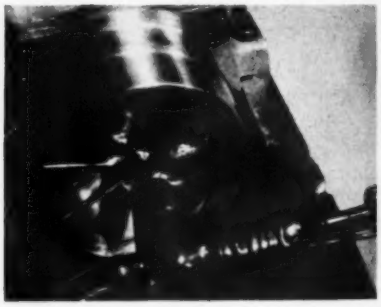
by WILLIAM A. MITCHENER

Experiments with supercharger indicate a 7-mph speed boost. MAN report.

Shown here with one of winning speed designs, author is no stranger to competition circles.



This blower on McCoy 60 enabled its builder to turn 162 mph for first King Orange Internats.



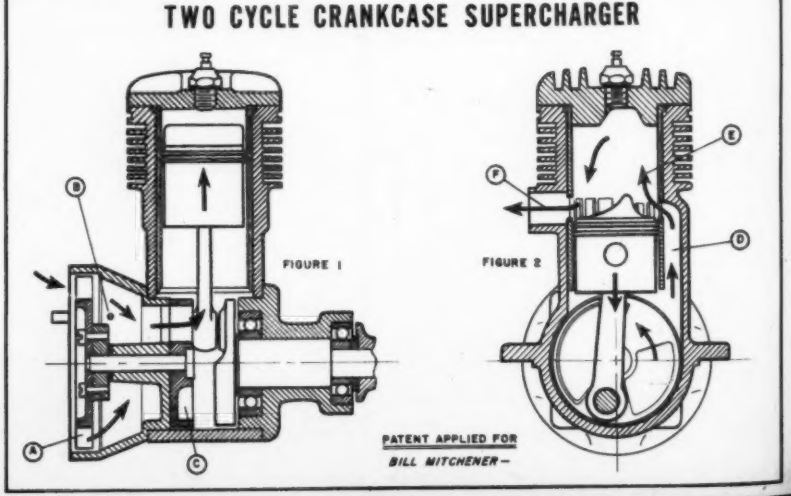
Supercharger engine and needle-valve assembly on metal speed pan. Drives from rotary shaft.

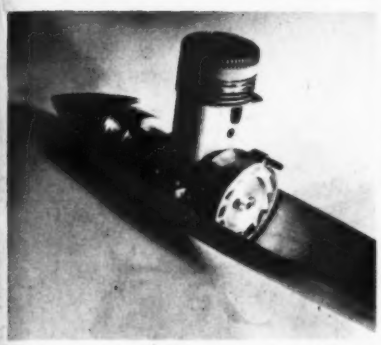
► During the past several years winning speeds at model meets have consistently been improved. The present National speed records average more than 20 mph faster than the 1950 records. Undoubtedly this advance is due to improvements to the model, new fuel systems, mono-line, and engine performance. The present records are good—very good; however, I feel we can still make great improvements. Engine hop-up specialists generally agree that the most effective methods of increasing engine power is to improve the engine's breathing ability. In this article I hope to point out the importance of breathing ability, its limitations, and a solution I have found.

Model engines are so sensitive to changes affecting their breathing ability that the results are often readily noticeable. I was first impressed with the importance of reducing the restriction to engine intake air flow as a Senior contestant in 1949. I had been flying one of the first McCoy 29's with the small diameter venturi at a consistant 115 mph. When I substituted the larger diameter McCoy 36 venturi, the speed jumped to a new Senior record of 127 mph.

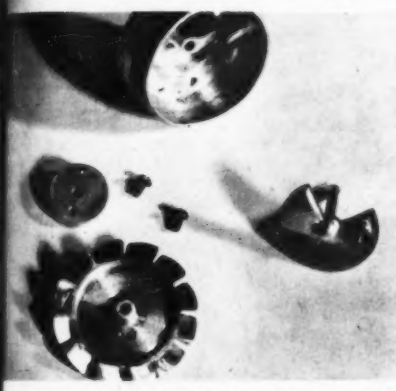
One of the biggest factors in reducing restriction to engine breathing is the pen-bladder fuel system. This pressure system permits the use of a larger intake area be-

Blower (A) draws air, boosts air-fuel flow thru rotary (C). Fuel jet (B) sprays into chamber between blower, rotary. Fuel-air mix from case (D) circulates in loop (E); aids gas removal (F).





Effective but simple blower on a modified Fox .29 would be a natural on Dooling .29 as well.



Stationary vane in housing directs a swirling from the blower into the rotary valve opening.

High speed drive, 70,000 rpm, enough pressure to stop pen-bladder. But took too much power.

cause it is no longer necessary to draw the fuel from the tank by venturi action. Streamlining cylinder intake ports and slight changes to rotary valve timing are also well accepted hop-up procedures.

Even with the above mentioned improvements the model engine's real horsepower potential is vastly limited by insufficient breathing ability. The reason for this restricted breathing becomes obvious when you look closely at the crankcase pumping system. The displacement of the underside of the piston into the crankcase is used to draw in and compress the air and fuel mixture for delivery to the cylinder. The displacement (bore times stroke) of the piston in the crankcase is naturally the same as the cylinder displacement. The volume of air that can be delivered to the cylinder is always considerably less than the displacement (*Continued on next page*)

See These Dealers for *Ace R/C*

Canada, Calgary, Alberta
UNIVERSAL HOBBY SUPPLY
913 8th Avenue, West

Canada, Hamilton, Ontario
RILEY HOBBY SERVICE
786 King Street, East

California, Carmichael
HOBBY CORRAL
5835 Fair Oaks Blvd.

California, Hollywood
BING'S GENERAL HOBBIES
7021 Sunset at Stanley

California, Los Angeles
COLONEL BOB'S
2737-1/2 W. Pico Blvd.

California, Lynwood
DUNHAM'S
10417 Long Beach Blvd.

California, Montebello
VICTORY HOBBY SHOP
1451 W. Whittier Blvd.

California, Oakland
BOOT'S HOBBY HUT
6098 Telegraph

California, Riverside
DICK'S HOBBY & LEATHER
6574 Magnolia-Hillmer's

California, San Leandro
STEVE'S HOBBY CORNER
896 East 14th Street

California, Whittier
JACKS HOBBYCRAFTS
328 N. Philadelphia

Colorado, Denver
DOWNTOWN HOBBIES & TOYS
1617 Champa Street

Colorado, Denver
TOM THUMB HOBBY CENTER
5125 East Colfax

Connecticut, New Britain
GENE'S HOBBYLAND
11 Franklin Square

Florida, Miami
TOBY'S
16259 N. W. 7th Avenue

Illinois, East St. Louis
EAST SIDE HOBBY SHOP
3344 State Street

Illinois, Wilmington
HUBBS HOBBIES
106 South Water

Indiana, Michigan City
COMMUNITY CRAFT HOBBY SHOP
828 Franklin Street

Iowa, Cedar Rapids
CHANDLER'S
827 Second Avenue, S. E.

Iowa, Des Moines
HIGHLAND HOBBY SHOP
1301 - 9th Avenue

Maine, Portland
STARRETT'S, INC.
145 High Street

Maryland, Baltimore
LLOYD'S HOBBY HEADQUARTERS
2201 North Charles Street

Massachusetts, Cambridge
CROSBY'S HOBBY CENTRE
1734-6 Massachusetts Ave.

Michigan, Detroit
JOE'S HOBBY CENTER
9615 Wyoming Avenue

Minnesota, Minneapolis
ROCKET RADIO & HOBBY
3450 - 4th Avenue, South

Minnesota, Minneapolis
WOODCRAFT HOBBY STORES
908 West Lake Street

Missouri, Normandy
TOM'S TRAINS & HOBBY SHOP
8400 Natural Bridge

Missouri, St. Louis
CHARLIE'S HOBBY HOUSE
6836 Mackinaw Avenue

New Mexico, Roswell
FRANK'S MODEL & HOBBY SHOP
813 North Washington

New Jersey, Parsippany
RICH'S HOBBYTOWNE
U. S. Route #46

New Jersey, Red Bank
HOBBY HEADQUARTERS
82 White Street

New York, Bronx
BROWN'S HOBBY CENTER
3081 Broadway

New York, Buffalo
FRONTIER HOBBIES
Central Park Center

New York, Vestal
TRIPLE CITIES RC
712 Delano Avenue

North Carolina, Charlotte
CENTER HARDWARE & HOBBY
6131 Park Rd. Shopping Ctr.

Ohio, Cleveland
BUD'S HOBBYCRAFT
7806 St. Clair Avenue

Ohio, Willoughby
KIRTLAND HOBBY SHOP
R. D. #2

Oregon, Portland
FLEGEL HOBBY SERVICE
4505 North Interstate

Pennsylvania, Philadelphia
RICHARD FRANCIS HOBBIES
5815 Woodland Avenue

Pennsylvania, Upper Darby
TODD'S
7308 W. Garrett Road

South Carolina, Charleston
MODELHOBBY
P. O. Box 535

Texas, San Antonio
LANG HOBBIES
4900 South Flores

Virginia, Richmond
THE HOBBY CENTER
3020 West Cary Street

Washington, Seattle
GREENWOOD HOBBY SHOP
141 North 85th Street

Wisconsin, Green Bay
BAY CRAFT & HOBBY SHOP
837 Forest Street

Wisconsin, Milwaukee
ACE HOBBY SHOP
6504 West Burleigh

Wisconsin, Racine
MARCY'S HOBBY SHOP
14th & Washington Ave.

DESIGNER APPROVED RC KITS

For several years Ace has worked with top R/C designers to produce exclusive designer-approved control kits, in which the designers themselves have selected and approved components used. Here are some ACE R/C exclusives:

WORTH Simpl-Simul Pulser

Now - go multi with proportional rudder and elevator with the Simpl-Simul by John Worth. Converts single channel CW or audio receiver and transmitter to give proportional rudder and elevator with true stick-type control. Receiver must be capable of following 10 cps.

Ace Simpl-Simul kits approved by John Worth are complete including 5% resistors and individually matched capacitors where required. Chicago Telephone pots are used for reliability and dependability. Metal parts are stamped and punched, 4x5x6 aluminum case is silk screened. Sigma 4F relay and 1AG4 tubes. Complete except for batteries.

Only **$21.95**

GOOD TTPW Dual Units

Ultimate in R/C fun, the WAG Dual system has stick-type control. Nearest thing to actually flying. Smooth proportional control of rudder and elevator and fail-safe operation of motor control. Dr. Walter A. Good personally selected components used.

Complete receiver kit with all tubes and relays. **$39.95**

Complete transmitter kit with tubes, xtal, cabinet. **$74.95**

MARCY Single & Multi Kits

Fabulous new audio system by Marcy Inkmann. Begin with single channel equipment and expand up to six without obsoleting any equipment along the way. Simple filters, instead of expensive toroids, hold cost down. Filters have band width of at least 200 cps, preventing transmitter drift and eliminating adjustment worries.

Single channel MarcyTone Receiver measures 2x2-7/8x1, weighs under 3 ounces. Includes tube, three transistors, relay, filter, all capacitors and resistors. Only. **$17.95**

MarcyTone Transmitter contains two 3A5 tubes - MOPA RF and multi-vibrator audio; Variable Frequency Oscillator, permits selection of 1700 to 7000 cps; slight modification allows unit to be used with other single channel audio receivers; 100% modulation; aluminited case 3x5-1/2x8 inches; expandable merely by plugging in control box; complete with tubes, 13 mc crystal, resistors, capacitors - everything required except batteries and 3 foot section music wire antenna. . **$18.95**

6 Channel MarcyTone Receiver - Basic RF and amplifier unit as well as 6 filters, 6 relays, 8 transistors and all other required components. Weighs under 10 ounces **$53.95**

6 Channel Control Box, converts transmitter above. **$18.95**

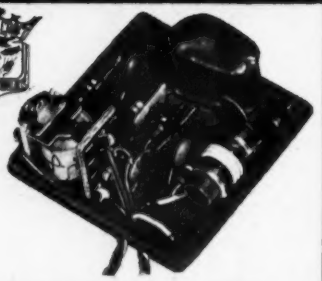
New catalog supplement 58-3 describes units in detail . . . it's FREE!

Ace R/C East
BOX 1096
MYRTLE BEACH, S.C.

Ace Radio Control
BOX 301 HIGGINSVILLE, MO.

Ace R/C West
BOX 18
CARMICHAEL, CALIF.

Rx for R/C



WAVEMASTER — A NEW DIMENSION IN R/C WITH "SINGLE-TOUCH" TUNING

Features: 2 (1AG4) hard tubes, "Deep Etch" printed circuit, HI-FI Quality matched components, 4MA current change for absolute, pin-point control at maximum ranges, customeered Aristo-Transformer, an import feature that completely eliminates sensitivity control, "HI-TORQUE" Super "Q" timer for locked-in tuning. Prices, less batteries.

READY-MADE $19.95
KIT w/2 tubes & relay $15.95

ARISTROL MOPA TRANSMITTER

Features printed circuit chassis, extended range transmission, 27¼ freq. & "tuning-eye" for fast, accurate checking, quality controlled hi-tolerance components & specially designed crystal.

E-Z ASSEMBLY KIT $14.95
READY-TO-USE (less batt.) $19.95

COMPACT "A" COMPOUND ACTUATOR

After a year of field testing, under all modeler conditions, Aristo-Craft announces the first of a series of radio-control servos . . . Compact "A" Compound Actuator.

Engineered to withstand the strains and stresses encountered in the radio control of aircraft, this servo is also ideally suited for boats, cars, etc. Small in size: 1⅜" x 1⅛" x 2¼", the Compact "A" is easily installed, requires no shock mounting. It has a low battery drain of only 200 M.A., allows more flight time with less battery changes. The high-torque motor delivers power to move even the largest control surface through a quiet running, long-life gear train. All electrical contacts are self-adjusting for trouble-free operation. There are no adjustments to make!

The Compact "A" Actuator is sealed in a clear plastic dust cover; all wires are color coded; complete instructions are included. $10.95

1" Sq. MILLIAMETER

Small enough to build into your Model. Specify range desired when ordered. Wgt. approx. 3/4 oz.

0 to 1, 0 to 5, 0 to 50 $5.95

DEALERS JOBBERS, REG. TRADE PRICES

POLK'S HOBBIES

314 FIFTH AVE Dept MA 18 N Y C

Faster than Fast

(*Continued from page 35*)

because of inefficient crankcase pumping action. A crankcase volumetric pumping efficiency of about 70% is all that can be expected from the conventional system. This low efficiency is mostly due to the large crankcase volume in relation to the piston displacement and the limited time to draw the mixture into the crankcase. The very best large, slow-acting crankcase-scavenged engines rarely exceed an air delivery to the cylinder of more than 80% of the displacement. The average is about 60%. It is usually not practical to greatly reduce the crankcase volume in an attempt to improve this pumping efficiency as this would increase the work required to force the piston downward into the crankcase.

To further understand the importance of sufficient breathing we must observe the scavenging action in the cylinder. This is illustrated in Figure 2 of the sketch. The exhaust port, being higher than the intake, is uncovered first so that the cylinder pressure is relieved to below the crankcase pressure. At this time the cylinder intake port is uncovered and the air fuel charge is caused to sweep out a portion of the remaining burned gases. During this sweeping action some of the fresh charge mixes with the burned gases which go out the exhaust. The net result is that a model airplane engine with a cylinder air delivery of 70% of the displacement volume will only trap a charge of about 50% combustible mixture.

An experimental reed valve and blower combination. Unfortunately, reed proved troublesome.

In order to obtain a proportional increase in horsepower it is only necessary to increase the percentage of combustible mixture in the cylinder. In high-output automotive two-cycle engines optimum power is accomplished by providing a separate air pump. This air pump delivers a volume of air to the cylinder which is normally about 120% of the piston displacement.

Various blowers figuring in author's experiment. All were cut out by hacksaw and filed to shape.

Even with this high delivery volume it is impossible to completely remove all of the burned gases, but the engine's output is greatly increased. To further increase output some two-cycle engines employ a more complex valving mechanism that closes the exhaust early to allow pressure charging of the cylinder. Pressure supercharging should, however, never be attempted until good scavenging efficiency has been obtained.

The blower in the Figure 1 of the sketch is designed to increase the percentage of combustible charge without greatly complicating the system. My thinking behind the blower is to increase the efficiency of the comparatively simple crankcase pumping system by aiding the flow of the fuel and air mixture at the critical point in the system. As previously stated, any slight restriction to flow into the crankcase will reduce the volume of mixture that is drawn into the crankcase. Conversely, by using a blower at this critical point in the system the quantity of mixture forced and drawn into the crankcase is increased. The percentage of combustible mixtures trapped in the cylinder is increased and the power output is proportionately increased.

The operation of the simple but effective blower induction system is almost self explanatory. The blower is driven directly from the rotary valve shaft. Air is drawn into the mixing chamber which contains the fuel jet. Fuel from the pen bladder fuel tank is first metered through a Fox 29R type needle valve before it is sprayed into the mixing chamber. When the rotary valve is closed, a stationary guide vane stops the swirling action and piles up a charge at the valve opening in the backplate. When the valve opens, the charge is both blown and drawn into the crankcase with minimum air flow restriction.

Designing the crankcase blower is not too complicated but there are several important points to keep in mind. The fuel mixing turbulence and blower action can be greatly increased by increasing the diameter of the blower. For example the pressure build up from the blower in the sketch is four times that of my original McCoy 60 blower.

In most of my experiments I have designed the blade pitch and area to give a no-slippage flow rate equivalent to twice the piston displacement per revolution.

The crankcase blower can be most easily adapted to rear rotary valve engines such as the McCoy 60, McCoy 29 and Dooling 29. On the Fox 29R I have obtained a substantial rpm improvement by plugging the hole in the crankshaft and using a rear rotary valve and blower.

Judging from recent rpm comparisons and test flying experience a well designed crankcase blower can be expected to give at least a seven mph increase in top speed.

Besides the power increase, there are several additional improvements to the overall engine operation. The turbulent action of the blower creates a uniform fuel mixture which results in a steady needle valve adjustment. This device has the low restriction advantage of a large intake without erratic needle valve adjustment due to poor carburation. Expelling a higher percentage of burned exhaust gases from the cylinder also results in cooler internal cylinder operation. This increases glow plug life and reduces the tendency for pre-ignition.

THE NEW Gold Standard IN ½A ENGINES

Thimble-Drome

GOLDEN BEE

.049

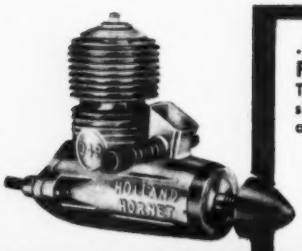
$4.95

at dealers in Thimble-Drome clear-view dust-proof packaging

The minute they lay eyes on it, model builders will thrill to its gleaming golden color and economical price! Typical Thimble-Drome 24-carat quality and performance...better than average ½A power, with the quick-starting that is a "T-D Standard". PLUS all the famous features that have made "Powered by Thimble-Drome" the symbol of dependability and performance! All-metal tank-carburetor unit, no outside fuel lines, rear needle valve, etc. AND a large size stunt type tank for longer flights.

L. M. COX MFG. CO., INC. • *P. O. Box 476, Santa Ana, California*

Nat'l Sales: Milt Grey Sales • 9538 Brighton Way, Beverly Hills, California



.049 HORNET FOR ½A
Top rpms . . . stronger crankshaft housing . . . extra cooling area . . . easy starting!
$6.95

2 NEW
HORNET
ENGINES IN THE HOBBY SKIES!

MODELERS will buzz with talk when they see these two hotter than hot engines! Designed by Bob Holland — former NATIONALS champ himself — full powered and FULLY TESTED through months of contest-type flying. BOTH Holland-designed ROTARY VALVE... BOTH Holland precision engineered!

AT YOUR DEALER

If it's Hotter than Hot, it's a Hornet by...

$6.95

.051 HORNET FOR CLASS A. *Extra power... extra performance without adding extra engine weight!*

HOLLAND ENGINEERING CO.
12928 SATICOY STREET, NO. HOLLYWOOD, CALIFORNIA

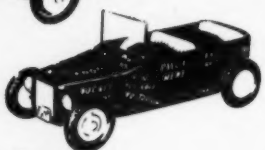
ACE

With easy to shape and finish Balsa wood Ace kit parts you can turn out a collection of models as beautifully detailed and professional as your skill permits. Ideal, too, for novice experience. Either way, you'll be proud you built them!

17 Ace Models

PICK-UP 60c

"T" ROD 60c



JALOPY 60c

HOT ROD $1.00

If no local dealer is convenient, send check or M.O. Include 10c per kit for packing and mailing. No C.O.D. please.

ACE PRODUCTS 60 N. San Gabriel Blvd. Pasadena 8, Calif

MODELHOBBY
RADIO CONTROL SPECIALISTS
PERSONALIZED SERVICE
PRE-PAID SHIPMENTS
COMPLETE STOCKS
BEGINNERS' QUESTIONS AND PROBLEMS ON RC WELCOMED
Send 10 cents for catalogue
MODELHOBBY
P.O. Box 435
Charleston, S.C.

PATENT PENDING

New ANNCO MOTOR CONTROL
ONLY $3.95

The new ANNCO two-speed valve gives you Hi Speed, Lo Speed and Fuel Shut-Off from any Single Needle Valve glow engine. From .049 to .60 Actuated by escapement or servo for RC or third line for U-Control.

- DEPENDABLE OPERATION
- SIZE: ⅝"x⅞"x¼"
- WEIGHT: ½ OZ.
- FULLY GUARANTEED

SEE YOUR DEALER FIRST!

If he can't supply you, order direct Send Check or M.-O. No C.O.D., please.

ANNCO ENGINEERING CO.
Dept. M-5621-10th Ave. So.
Minneapolis 23, Minnesota

Foreign Notes

(*Continued from page 7*)

perfect 9:00 total to win first place, followed by Hikari Suzuki in second spot. Both used Enya 15-D Diesels turning 9/4 props. Back in March, at the Shonan FAI Contest at Hiratuka, it was another Enya benefit with S. Iwasaki's 15-1B glow engined model recording 8:28 to win, followed M. Veda (15-1B) second, H. Suzuki (15-D Diesel) third and M. Miki (15-1B) fourth. In the event for 1 c.c. engined models at this contest, incidentally, Takeo Asano won, using a British Allen-Mercury .06 cu. in. Diesel.

SWITZERLAND

A new, smaller, pulse-jet motor has appeared in Switzerland. Called the Fuehrer ("Leader"), it weighs under 9 oz., has a maximum diameter of 2¼ in. and is 18⅛ in. long. The engine has a 10-port valve head, like most engines of the Dyna-Jet type but, unlike most of them, each valve petal is separate (like the East German Victoria jet) and is held in place by a separate screw. According to claims made for the engine, this gives better sealing and more positive starting. Another feature of the Fuehrer is a mounting bracket below the combustion chamber. Static thrust is claimed to be three lbs. and the engine is said to perform quite well in stunt models. Selling price is low and equivalent to about $10.

IN BRIEF . . .

Germany . . . Webra's new Komet (.15 cu. in.) and Bully (.21) diesels are somewhat similar to the well-known Mach-1, but have shaft induction. Available as extras for these two motors are a Bramco type throttle and a muffler unit. The Webra version of the Ruppert Twin Diesel has been re-named Boxer. It costs, in Germany, DM.185- (approx. $44), or DM.215- (approx. $51) with vacuum pump.

Japan . . . Following the pioneer electric flights last year in England by Lt. Col. Taplin, we have a report of similar flights in Japan, where a manufacturer of miniature electric motors has succeeded in flying a model for ten minutes using a geared motor.

England . . . Undoubtedly the biggest audience ever to see a C/L demonstration in England, over 80,000 spectators at the world-famous Wembley Stadium recently watched stunting, combat and balloon-bursting demonstrations put on by London area modelers. The occasion was the Schoolboys' International football match. The half-hour demonstration drew frenzied applause from the youthful crowd and should be adding quite a few football fans to the ranks of modeling before long.

5 Hours, 29 Minutes

(*Continued from page 19*)

circle to the left. The flight pattern was simple. I let the airplane circle to a safe altitude, throttled back slightly and then flew the airplane up-wind. Since it was practically calm the airplane drifted very slowly from up-wind to down-wind, flying in its big, lazy, left circle. For several minutes at a time it would not be necessary to give any command at all. Then after it had drifted down-wind I would fly it back up-wind and repeat the pattern. In fact, as the flight wore on, more commands were given to change the engine speed than were required to keep the airplane in its prescribed flight path.

After the first hour passed we felt reassured that our needle valve setting was good, and that the fuel system had passed the critical time. Now it was just a matter

of flying the airplane and compensating for the wind and thermal currents. The thermals would cause the airplane to rise rapidly, even at cruising rpm. We would then go to a minimum rpm, the airplane would sink back down, then we would go back up to cruising rpm until the next thermal started to carry the airplane aloft.

As we approached the three hour and six minutes mark of the Russians, the tension became great. We passed it without incident, and finally we passed the necessary two percent additional time required. We shook hands all around—that took care of the Russians. Now for the Belgians! We thought this might be critical since we had not put in a full load of fuel and the tanks looked very thin already. However, four hours passed, then four hours and fifteen minutes. At that time I let the airplane fly to a very high altitude, figuring that even if the engine were to quit I could exceed the required four hours and thirty-one minutes by gliding from thermal to thermal. As it turned out, this was unnecessary. We passed the four hours and thirty-one minutes, and droned on.

When we reached the five hour mark we could almost see the question marks over our heads. How much longer would it fly? We were now getting to the point where the number of usable commands left was questionable, the battery voltages were untried, and the worst thing that could happen would be to have the airplane fly away and thus nullify the entire record attempt. We decided to gamble another half hour, that is, if the engine continued to run. It did. At five hours and twenty-five minutes the airplane was high in the sky when I decided to terminate the flight. I put the engine into low speed and then did spirals and wing-overs to bring the airplane down. At five hours and twenty-eight minutes the engine quit. The airplane came in for a gentle landing 29 feet from the point of take-off. (The FAI requires a maximum of 500 meters).

So, after two months of sweat, tension, trials, crashes, repairs, and re-rigging, we finally tasted success. We were probably the two happiest modelers in the world.

Simpl-Simul

(*Continued from page 22*)

to trip a switch or mechanism to operate the auxiliary control. Resumption of pulsing then restores crank oscillation within limits for normal control.

The balancing process is very sensitive to slight variations of the factors mentioned. Actuator voltage is the principal source of trouble and the use of dry batteries has not proved to be satisfactory. When new, dry cell voltage is high and there is a tendency for the crank to overshoot during normal pulsing so as to trigger the auxiliary control prematurely. When old, dry cells produce voltage too low so that the actuator cannot overcome the normal centering tension and the auxiliary control cannot be triggered. With dry batteries, the usable period of relatively stable voltage is too short unless an extra large capacity supply is used; weight and space penalty for this is excessive.

Further complicating the balancing process are rubber tension sensitivity to temperature and pulse-length signal limitations. In the first case, rubber tension may have to be adjusted differently for hot and cool weather conditions. In the basic system, with the crank stops, this is not critical but with the stopless overshoot type of triggering tension adjustment must be much more precise. In any case, note that some synthetic rubber bands are especially poor in cold weather; losing practically all

25¢ **THIS COUPON WORTH 25¢** 25¢

GET A 25¢ NYLON PROP FREE! To help introduce our new Swordsman (described below), I'm offering a practically indestructible 25¢ 6-3 nylon propeller, just right for this model . . . absolutely FREE! It's this easy: buy the Swordsman at your dealer, and send me its name off the FRONT of the box along with this coupon. That's all you do! We'll immediately send you your FREE NYLON PROPELLER! This limited offer is good only until August 31, 1958. So . . . don't delay — see your dealer today!

SWORDSMAN-18

FOR .020 TO .049 GAS ENGINES

THE NEWEST CONTROL LINE MODEL BY — *Carl Goldberg*

$1.49

DIE-CUT INTERLOCKING ALL BALSA CONSTRUCTION

18" WINGSPAN

FIELD TESTED AND PROVEN FOR CONTROL LINE

Dear Modeler:
Have you ever wished for an easy-to-build ½A control model with ENOUGH WING AREA to fly well? And a RUGGED engine mounting? And the landing gear far enough forward? And a working rubber tail-wheel? Well, you'll find all these and still more features in my new Swordsman-18! It's speedy, sturdy, stable-flying and responsive — easy on the beginner, and a pleasure for the more experienced flyer. Wingspan 18", length 14", for .020 to .049 gas engines. Fully prefab construction (no paper), with all die-cut, interlocking balsa and plywood parts, formed landing gear, rubber wheels, large and colorful decal, plastic canopy and step-by-step illustrated plans. Now being delivered to your dealer — only $1.49.

RANGER 30—Die-cut balsa, 30" span, for 0.20-.049 engine. **$1.95**

½ A BLAZER—Die-cut balsa, tissue. 40" span, for .049 engine. **$2.50**

RANGER 28 — My "pre-fab plus paper". 28" span, 2 colors **$1.00**

CESSNA 180 — The champion of business liners. 21" span. **$1.00**

SHOESTRING RACER—18" span. All die-cut balsa. Complete **$1.00**

RANGER 21 — All die-cut balsa parts. 21" span beauty. **$1.00**

SPIRIT OF ST. LOUIS—A miniature duplicate. 21" wingspan. **$1.00**

Carl Goldberg

P.S. If no dealer near you, send me cost of plane plus 25¢ each for postage and packaging. Or send cost of any three and I'll pay the postage.

CARL GOLDBERG MODELS
1947 S. CLAREMONT, CHICAGO 43, ILL.

CHART MODEL A

HOBBY INDUSTRY

COMBINED WITH HOBBY MERCHANDISER

NOW! 2 MAGAZINES HAVE BECOME 1!

PACKED FULL OF

- MONEY MAKING IDEAS
- NEW PROFITABLE PRODUCTS
- "HOW TO SELL MORE" ARTICLES

Free Sample Copies to Retailers— Send Request on Business Letterhead to

HOBBY PUBLICATIONS, INC.
30 East 29th Street New York 16, N.Y.

NEW from **PERFECT**

54 FT. SPOOLED

½A DACRON CONTROL LINE

Extra footage for tying. High strength. Flight tested for 11 lb. pull. Pre-stretched for maximum control.

25c

Also Look For Perfect Fuel Line, Fuel Tanks, Fuel Pumps, Wheels, Parts

MISS TINY R/C

THE ALL-TIME FAVORITE GOES RADIO CONTROL

MISS TINY $5.95

Exceptional wind penetration and stability!

A good flying R/C Model doesn't have to be an ugly box! Miss Tiny is world-famous for her beauty and flying qualities. Uses hot .049 to .099 engines, depending on weight of R/C gear. Wing Span 46". Finished cowl and die-cut parts.

A-1 NORDIC GLIDER

THE GHOST
Kit $2.95

Only A-1 Class Nordic Glider on the market! Adapted from latest, hottest German designs. With Auto Rudder and Pop-Up De-thermalizer, this model, properly trimmed, tows flat—no fall-off either side—to position straight overhead on 164 ft. line!

Ask your Dealer, or send M.O. and we'll ship prepaid. (Mr. Dealer—same goes for you—prepaid shipment, regular discounts.)

MODELCRAFT

8943 SOUTH WESTERN AVENUE
LOS ANGELES 47, CALIFORNIA

NOW AVAILABLE!

RC FIELD BOX by Broadfield

NEW "HOLD-DOWN" LEG STAKES. HDW. PACKAGED IN PLASTIC-REUSABLE BOX. N/P CATCHES-HINGES.

• AT LAST—the first truly double-duty field box that simplifies plane servicing. PROVIDES: waist-high stand to prepare your plane for flight, with ample space for tools, meters, fuel, etc. PREVENTS: laborious stooping and kneeling; injuries to person or plane parts.

• EZY-TO-BUILD KIT
• All parts pre-fab ¼ in. plywood
• Shaped-adjustable brackets
• Hardwood shaped-legs
• Hdw. glue, color decal, etc.
• Assembly plan
• Designed for RC or FF

• J-7F RC Field box kit **$10.95** Post Pd.

• J-7F RC Field box built-up **$17.95** Post Pd.

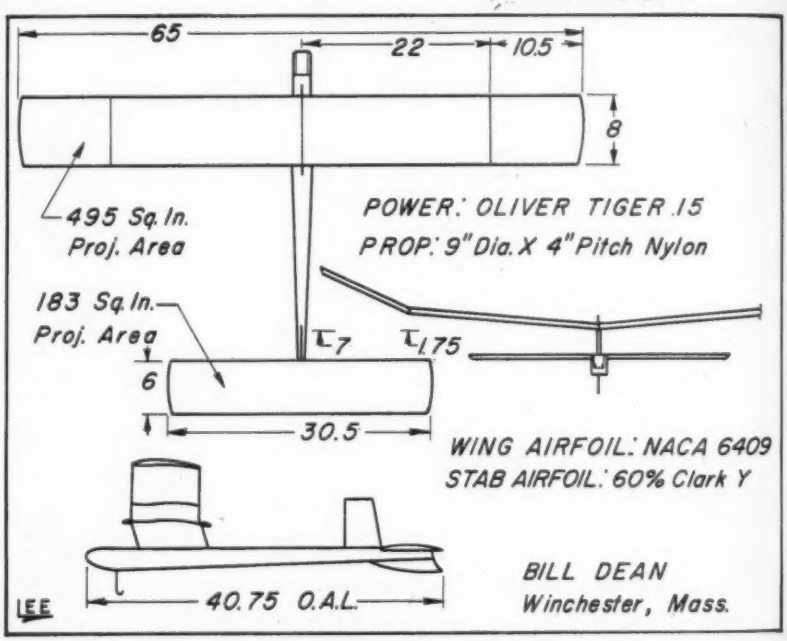
SEE YOUR DEALER OR ORDER DIRECT

BROADFIELD AIR-MODELS **ASHLAND, MASS**

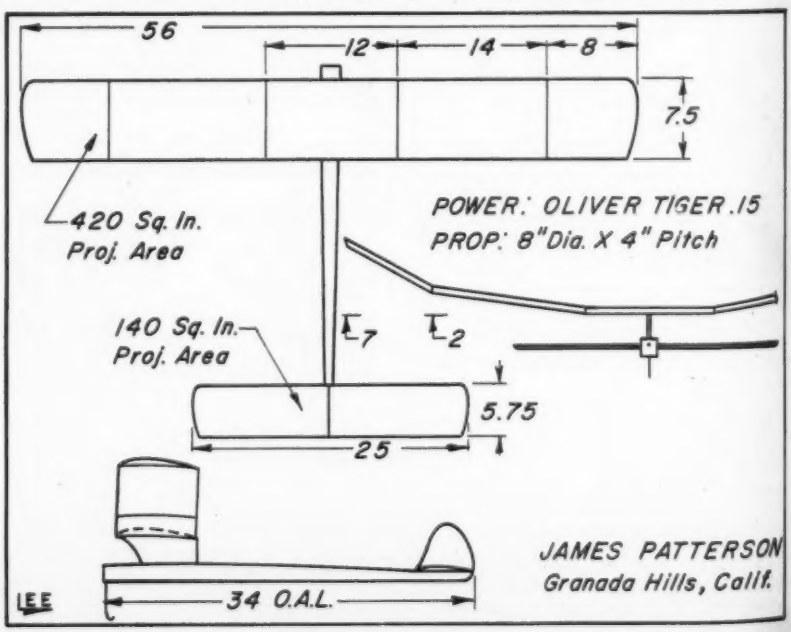
tension. Excessive pulse length variation for full rudder control signals also bothers the overshoot principle since it causes erratic and uncalled for triggering. Extreme pulse-length signals may approach closely a solid signal condition, making adjustment difficult to distinguish between normal and auxiliary control signals. Pulse length tolerance of the basic S/S system, using positive crank stops, is great, but with the stops removed maximum pulse-length variation may require limiting to no more than a 60%-40% differential.

Trigger switch: Despite the obstacles, a mechanically triggered auxiliary control offers versatility and simplicity of components. Note the photo which shows a switch adapted from a Sigma relay. The armature and contact point assembly is mounted so that when struck by the actuator motor crank the switch is closed on one side or the other. Solid off signal always drives the crank in the same direction so that the same switch contact is made each time this condition occurs. Likewise, solid signal on always drives the crank in the opposite direction to actuate the other contact. Therefore, auxiliary control operation can be selective, with signal off providing a fail-safe condition (low engine speed, for instance) and signal on a strictly command control (high speed). Fig. 1 illustrates a typical hookup of switch contacts to operate another motor or actuator such as might be used to drive an exhaust throttle or intake butterfly.

(*Continued on page* 42)



Three views of two of the FAI free flight models to be flown by American team members in '58.



NOW! A TORPEDO .19RC WITH WIDE RANGE CONTROL

.19RC
$19.95

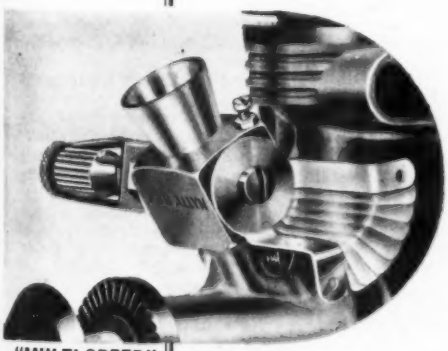
The world-famous **TORPEDO .19** now is available with the precision-made **"Multi-Speed" Carburetor** and is known as the **TORPEDO .19RC.** Along with the .35RC which has set a blistering pace in radio control flying (see our April ad) it is the second TORPEDO engine to be equipped with the terrific "Multi-Speed" Carburetor designed to provide radio control operation at its best. Only the .19RC and .35RC provide top RPM and also, tick off the low RPM required for radio control flying, with *complete in-between* RPM control. The "Multi-Speed" carburetor with its built-in low speed adjustment plus the new crankshaft porting makes this wide range possible.

Also, you'll do best with the TORPEDO .19RC and TORPEDO .35RC in U-Control Scale and Carrier events or wherever variable speed is needed... the only engine equipped with the "Multi-Speed" carburetor.

.35RC
$22.95

The "Multi-Speed" Carburetor features:

- **Built-in adjusting screw for low speed operation.**
- **Built-in positive stop at full open position.**
- **Precision machined aluminum body.**
- **Precision ground steel barrel . . . provides smooth operation and longer life.**
- **May be disassembled and cleaned with ease on the field by merely removing the low speed adjusting screw and still retain all other adjustments.**
- **Stationary needle valve assembly . . . it's easy to adjust, as only the carburetor barrel rotates in operation.**



"MULTI-SPEED" CARBURETOR
$5.95

K & B Allyn

"MULTI-SPEED" Carburetor

This same wide-range carburetor is available, now, in 2 sizes for installation on most other engines... the "Multi-Speed" for .19 through .25 and the "Multi-Speed" for .29 and up.

The K & B Allyn "Multi-Speed" carburetor is the greatest step forward in many years for model engines. Equip your engine with the "Multi-Speed" to fit your need and have complete control from low speed idle to maximum RPM.

Again available – *new and revised* – the popular K & B Allyn, wallet size, ***"SPEED CHART."*** It's yours FREE! Send self-addressed, stamped envelope.

K&B ALLYN COMPANY · 5732 DUARTE STREET · LOS ANGELES 58, CALIFORNIA

YOU CAN WIN CASH
OR ONE OF 252 OTHER GREAT PRIZES!

HOW MANY RINGMASTER KITS have been sold by

Note, too, that the arrangement provides a stop for the crank at about the neutral rudder position (approx. 180 degrees opposite normal neutral rudder crank position). Thus, auxiliary control triggering occurs with rudder in or nearly neutral, which is also a fail-safe condition for this control. The elevator, however, would be full up at this time, unless a special elevator yoke is used as shown in Fig. 2. By modifying the elevator yoke in this manner the crank can slip out of the yoke whenever the crank exceeds the normal control travel—a light spring is used to prevent the elevator from going to full down when the yoke disengages. The spring and slipstream combine to hold the elevator in neutral until resumption of pulsing automatically slips the crank back into the yoke to regain normal control.

"Free" power: Still simpler than the switch arrangement is a fully mechanical auxiliary control set-up. Here, a Bonner or similar type air bleed selector valve may be substituted for the relay contacts. Instead, the crank flips the valve to one position or the other to provide two-speed engine control via a dual needle valve arrangement. Many other tricky set-ups have been dreamed up, but the foregoing is enough to suggest adaptation of your own pet scheme. One further hint: the crank can also trigger an escapement mechanism directly—no electrical energy is required if the crank is used to trip the escapement pawl. In fact, why not work two escapements: one for each solid signal condition?

Reliability answer: Now that the examples of mechanical trigger controls have been shown to be desirable, we're back to the original problem; a source of stable actuator voltage is required to assure consistent triggering. Wet-cell power is the natural answer since it provides practically constant voltage under varying load for most of the life of a cell. However, wet cells do require more care in handling, demand proper charging and involve more expense. But they do the job and make the overall system installation inherently more reliable. Sooner or later most R/C fliers go to wet cell power regardless of the type of control system.

Electronic trigger: However intriguing are mechanical triggers, most successful S/S auxiliary controls to date have been operated through electronic means. Here the principle is to have a relay held out (or in) during pulsing, then pull in (or drop out) on momentary solid signal. The relay is then used to switch whatever control device is preferred. The main advantage of the electronic trigger is that the basic control system need not be modified—the positive stops are retained to provide maximum reliability and ease of adjustment. One of the best circuits is credited to Bob Quick, of Florida. It adds a tube and relay stage to any receiver, as shown in Fig. 3. During pulsing, the tube is held at cut-off so the relay is not energized. On solid signal the tube conducts and pulls in the relay. The tube's low drain (40 ma for the 1AG4) is easy on the receiver's normal filament batteries and good current change (2-4 ma with 8k to 4k relays) assures solid relay operation. Grid condenser and/or resistor values can be varied to obtain the exact time delay desired (more resistance and/or capacitance for longer delay and vice versa—half second is about optimum). One important point: the circuit operates very reliably on signal on, but may be erratic with solid signal off when used with some receivers—others apparently are satisfactory. A bench check is advised before going ahead with model installation.

Electronic fail-safe: Neutral rudder on auxiliary control actuation on transmitter failure may be provided, if the basic S/S actuator is also wired through the auxiliary relay, as shown in Fig. 4. Pulsing maintains the normal control circuit which is closed when the auxiliary relay is not energized, but when this relay pulls in, the S/S actuator is disconnected since power switches to the auxiliary control actuator. But, when this happens, the elevator will be snapped to full down by the actuation centering tension—it might be tolerated as momentarily annoying during auxiliary control triggering, but could be disastrous on signal failure! Solution? Easy: invert the control surface crank! Now fast pulse must be used for up, slow pulse for down. Signal failure now gives neutral rudder with up elevator.

Reversed elevator: Momentary up elevator during auxiliary control operation is quite acceptable and the solid up elevator for fail-safe is usually better than an all-neutral flyaway or full over-control spiral dive. The reversed elevator control has another benefit also. With the usual high pulse rate at full down, rudder control is very delicate when the stick is shoved full forward. With reversed elevator signals, full down at low rate provides a very broad rudder control for precise steering at higher airspeeds. Yet, with full up at high pulse rate, rudder conrtol is sensitive and aids in providing quick corrections when the model is in an almost stalled or looping attitude. The reversed elevator rate set-up, however, is recommended only when used with the electronic auxiliary control which has the extra relay for fail-safe. Otherwise, if used in the basic S/S setup, signal off would result in full rudder and down elevator!

It's the All-Time Favorite! The BEST-SELLING Plane Kit in Model History!

YOU'RE RIGHT, if you guess that Sterling's RINGMASTER is the most popular gas-powered model airplane kit ever made! You see RINGMASTERS winning top competitions, YEAR AFTER YEAR, the world over! Why? Just build a RINGMASTER, and see for yourself the reason that countless thousands of beginners learned to build and fly their first control line plane using this great model . . . and THEY STILL DO, MORE THAN EVER!

LAST CHANCE TO ENTER!

It's easy! Get help from your Hobby Dealer, if you wish. You can be one of 253 big winners!

1st Prize— $100.00 in Cash

2nd Prize— $50.00 in Cash

3rd Prize— $25.00 in Cash

Next 50 Prizes— 50 Ringmaster Kits

MORE PRIZES!

50 STARFIRE Kits
Kit S-10, $3.50—Span 40"

50 "T" SQUARE Kits
Kit S-11, $2.95—Span 36"

50 SPACE MASTER JR. Kits
Kit S-4, $2.75—Span 24"

50 RINGMASTER JR. Kits
Kit S-5, $2.50—Span 30"

FOLLOW THESE EASY CONTEST RULES!

1. Guess how many Sterling RINGMASTER kits have been sold up to March 1, 1958.
2. Write your answer, with your name, address, and age, and the name and address of your Hobby Dealer, on the end of the box of *any* Sterling kit (plane or boat). Then attach the OTHER end of the same box, enclose BOTH in an envelope, and mail to Sterling Models, Contest Dept., Belfield Ave. & Wister St., Phila. 44, Pa. BOTH ends of the box *must* be enclosed (or facsimiles thereof) or your entry will be disqualified.
3. All entries must be postmarked not later than midnight, September 1, 1958.
4. Anyone is eligible to enter this contest except employees of Sterling Models, their advertising agency, and their bank. Contestants may submit as many entries as they wish, but each entry must be accompanied by two Sterling box ends (as described above) or facsimiles thereof.
5. The number of Sterling RINGMASTER kits actually sold up to March 1, 1958, has been deposited with Mr. C. C. Bost, Jr., of the Girard Trust Corn Exchange Bank in Philadelphia. The contestant whose entry is closest to this number will win first prize, the next closest, second prize, etc. In case of tie, the earliest postmark will be given preference, so be sure to get your entry in early. Neatness is also a consideration.
6. All entries become the property of Sterling Models, and the decision of the judges is final.

WHEN IT'S MADE BY STERLING, IT'S *Unconditionally Guaranteed . . . in Writing!*

Sterling Models
Belfield Ave. & Wister St., Philadelphia 44, Pa.

Please send me a copy of the new, 1958 Sterling Catalog. Enclosed is my 10c to cover handling and mailing.

Name_____

Address_____

City_____ Zone_____ State_____

Sterling MODELS

Belfield Ave. & Wister St. • Philadelphia 44, Pa.

FLYING CONSIDERATIONS

Control limitations: For beginners, not too much elevator response is a good thing. Only a slightly effective elevator can be a big help and yet not be a dangerous control in the hands of novices. On the other hand, for the serious competition flier or the sport who likes to really wring out a ship, there is no such thing as too much elevator control. The S/S pulser, as presented in the first article of this series, does not provide a great range of elevator control through the control stick alone. Yet, with the trim knob, this range can be extended if needed. The pulser is thus fairly tame though still capable of considerable control. However, for violent flying the pulser may be lacking because, when adjusted for adequate up control, it may not provide sufficient down elevator for brute force maneuvers; such as, inverted flight, vertical dives, etc.

Increasing elevator control: Substitution of a different rate control pot for the specified standard 250k unit is necessary for maximum control. The pot to use is the Ace 60-degree 100k pot (Ace R/C-Higginsville, Mo.), which provides a much greater rate change for the normal amount of stick travel. With this substitution, high rate is extended from a normal maximum of 7-9 cps to about double. This extra range will just about freeze the crank in the center position, providing a solid down elevator (with the inverted crank described earlier, the same range extension is provided: now up elevator is solid so that the linkage can be adjusted for more effective down elevator at lowest rate). Another means of obtaining a slightly higher rate in the pulser, though not as effective as the 60 degree pot, is to simply use CK5672 tubes in place of the 1AG4's specified—no circuit change necessary.

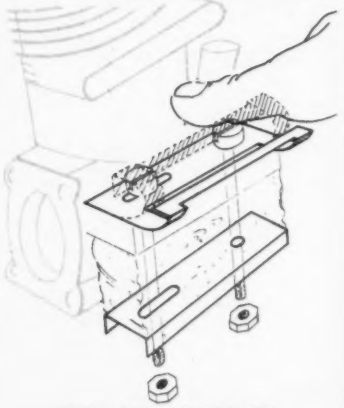
Trim tips: Even without the extra rate range, the original pulser can provide some wild flying, by making the most effective use of the elevator trim knob together with optimum airplane adjustment to get rid of excessive model stability which is a hindrance to maneuverability. With a 25% CG trim most models are gentle and can even be sluggish to control, but a 35% CG can make the same model a terror. Similarly, a model with three to five degrees difference between wing and tail incidence settings behaves much more tamely than one with only one to two degrees difference. Don't go less than this unless you like ulcers—zero/zero trim requires full up elevator just for level flight and only a twitch of the stick toward down can dump all lift immediately. My 7½-lb., .35-powered Live Wire Cruiser is set up with 33% c.g., two degrees difference between wing and tail.

Techniques: With such an overweight monster, take-off requires almost full back stick AND full up-elevator trim. Climb to altitude is made with lots of back stick and more or less rudder as needed to maintain a nice spiral—no low-level buzzing with this ship as the engine power is too marginal for quick recovery. As long as the model flies at reasonable airspeed, there is sufficient up stick control for most flying, even with full down trim. But if the ship should slow up near a stall, loss of altitude cannot be prevented. It can be seen that the same ship on rudder-only would be overpowered, but with dual control more power is required. Therefore, in this case, lots of altitude is mandatory for performance.

Upon leveling off, despite applying full down elevator trim, slapping the stick full forward results in only about a 30 degree dive is sufficient for easy looping. In a is needed for hot piloting. However, the dive is sufficient for easy looping. In a clunker such as mine a clean loop requires slapping full back stick and immediately rolling in full up trim (with a ship that has 16 oz. or less per sq. ft. wing loading loops are easy from level flight). For true vertical dives some trickery is required; from level flight the model is first rolled over by slapping full rudder followed almost immediately with full forward stick. Done right, having been previously set up with full down trim, the ship takes the straightest path to China! Pylon turns are beautifully made from level flight by yanking the stick diagonally back into the corner, then to neutral rudder and about half down stick for clean recovery—practice makes this a spine tingling but precise maneuver difficult to duplicate with anything except a dual-proportional control system.

Any time the nose is down in a turn, such as in a spiral dive, recovery may require unnatural reaction. The first tendency is to pull back on the stick, but on a model really heeled over the up elevator acts as a rudder and tightens up the turn further. Recovery technique is to first hit opposite rudder then up elevator. This is best practiced on early flights, with plenty of altitude. Note that the references to slapping the control stick around are literally true for hot flying—especially on entering maneuvers, stick action should be positive and quick. Recovery, however, is best with smooth exact positioning of the stick which experience teaches is just right for each given maneuver—practically all recoveries require some down elevator to kill off the zoom that results from excess speed build up. (*Continued on page* 44)

ALL-NEW!
FOOL PROOF
PAT. PEND.
SAFE-T-LOCK
MOUNTING BOLT SET
BY KAP-PAK
19c



FITS ALL 19 TO 35 ENGINES

Also available for mounting engines

V5	4-40 x 1",	Bolts with elastic stop nuts....19c
V6	4-40 x 1½",	Bolts with elastic stop nuts....19c
V7	3-48 x ¾",	Bolts with elastic stop nuts....19c
V8	3-48 x ½",	Bolts with elastic stop nuts....19c
V10	4-40 x 1¼",	Bolts with regular nuts.....15c
V11	4-40 x 1",	Bolts with regular nuts.....15c
V12	3-48 x ¾",	Bolts with regular nuts.....10c
V13	3-48 x ½",	Bolts with regular nuts.....10c
137	3-48, Quantity 4—Blind Mounting Nuts.....20c	
138	2-56, Quantity 4—Blind Mounting Nuts.....20c	
253	4-40, Quantity 4—Blind Mounting Nuts.....15c	

KAP-PAK PRODUCTS, INC.
156 WEST WALTON PLACE, CHICAGO 10, ILLINOIS

Next Issue M.A.N.
EARLY BIRDS
By Doug Rolfe

Landing: When the engine cuts, full up trim is rolled in for assurance of adequate flare on touch-down, if necessary. But on the approach, stalling and ballooning is avoided with sufficient down stick to keep the model flying fast and nose down. Keeping the nose down provides the excess speed which enables a landing to be stretched—a stally approach usually falls short and may end up with the model dropping out of the sky. To prevent overshooting, "S" turn back and forth as needed, always being careful to keep the nose down. Those used to full deflection elevators are often surprised to learn that proportional control landings can be so precise. This is because elevator corrections are made continually right down to the ground, in contrast to the comparative lack of elevator control on approaches with full thrown systems for fear that a careless blip will ruin the maneuver. With S/S you fly all the way—the control stick links you directly to the model with just the amount of response you call for.

Conclusion

The kind of flying you can do with Simpl/Simul takes lots of cash and complexity to do otherwise. Several thousand S/S flights have been accumulated among a number of groups across the country. Therefore, the system is not just an idea still in need of development. If you want more performance and satisfaction from your old radio gear, or if you feel that the pro-priced equipment is out of reach, look to S/S for a big step nearer to true piloting.

Bebe-Jodel

(*Continued from page* 23)

the top of the fuselage and 1/32" sheet planking on the bottom. Except for final sanding and covering the fuselage is complete.

It would be a good idea at the present time to carve the nose block. Cement a ¾" sheet plug, which has been cut to fit inside the front of the fuselage, to a 1" x ¾" x 1¾" balsa block. Drill a ¾" diameter hole through it as shown on the plan. Plug the nose block into the fuselage and carve it to match the contour of the fuselage and fair it to ¾" round at the front. Sand it smooth and add the thrust buttons, the scrap balsa air intake, and the dummy motor, which is also made from scrap balsa. Note how the cylinder fins are simulated by wrapping with heavy thread.

The wing is of standard construction. Cut out 9 W-1 ribs and two each of W-2 and W-3. Note that five of the W-1 ribs have an extra notch for a 1/16" x 1/8" spar and the two W-1 ribs at the dihedral breaks have an enlarged notch to accommodate the spar and dihedral brace. Next, cut to proper length and carefully notch the trailing edge. It is standard ¾" trailing edge and if none can be obtained you can taper a 3/32" x 3/8" strip. Just carve it to shape roughly with your razor blade or modeling knife and finish by sanding. Always sand across the strip and not along the length of it. Sanding along the length will tend to squash the wood fibers instead of removing them and will cause the strip to bow.

The spar is cut to proper length now and tapered as shown for the wing tips. Place wax paper over the plan and pin the spar and the trailing edge in place. Cement the ribs in place after this and then the leading edge, which is set on edge, is cemented in place. Don't stick pins through the leading edge but along the front of it to merely hold it against the ribs. Slanting the pins back will hold the leading edge down and back against the ribs.

After the wing has been allowed to dry thoroughly, preferably overnight, lift it from the board. Block up the tips 1¾" and cement the wing panels together, add the dihedral brace and the 1/16" sheet corner gussets. The 1/32" wire landing gear is bent at this time. Just two 90° bends are required. Exactly 2" of wire must extend from the bottom of the wing. Don't bend the axles for the wheels yet. Bind the landing gear to a 1/16" x 1/8" spar cut to proper length from the plan. Cement the spar to the wing and carefully stick the 1/32" wire into the 1/16" x 1/4" main spar. Cement this spar in well and add the 1/16" sheet corner gussets. Cement the ¾" sheet wing tips in place. Use the W-3 rib outline to cut out the tips. Now sand the wing lightly to remove all rough spots and check the cement joints.

The tail surfaces are constructed by first pinning the 1/16" x 1/8" outline down to the plan and then filling in with the 1/16" sq. strips. Take care to let the tail surfaces dry thoroughly because they are prone to warp easily and lifting them from the board before the cement dries will only aggravate this condition. The tail surfaces could be cut from very light 1/16" sheet. A quarter-grained (resists bending) sheet of 1/16" x 3" x 36" that weighs ¼ oz. will do nicely.

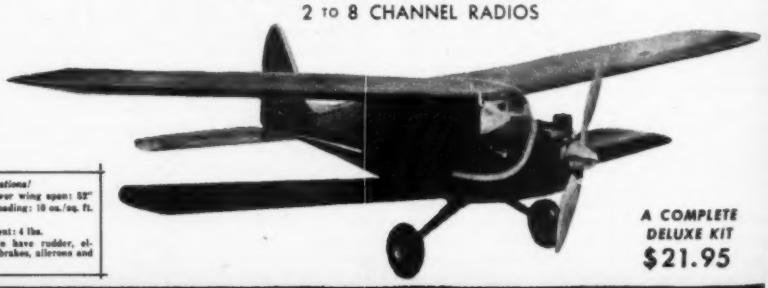
ANNOUNCING the FINE NEW
THE FIRST *Really* NEW R/C Model
Advancement in over 5 years!

Not since the advent of the 1st Live Wire has there been such a sensational advancement in R/C model design as the new Custom Live Wire offers! After 3 years of intensive development the "Custom" comes with features which make it the first fully aerobatic R/C model kit! Only now is it possible to duplicate completely full scale aircraft controls and achieve performance equal to them, both in the air and on the ground!
The "Custom" has symmetrical airfoil wings for greater stability and equalized inverted maneuvering. Its Biplane wings give the area required to provide a low wing loading, the answer to quick, snappy maneuvers! The Biplane also affords a very low gross weight plus compactness for ease of transportation. Coupled with the fine aerodynamic qualities comes a brilliant undercarriage system which by the use of a steerable tail wheel and wheel brakes gives absolute ground control on the roughest of terrain. Takeoffs, landings and all taxiing now becomes a pleasure!
With the "Custom" Live Wire you have the most modern and versatile radio controlled miniature aircraft that could be wished for!

The fine deluxe kit includes:
- Giant full size plans with complete assembly details!
- Complete radio installation instructions with details!
- Complete preflight and flying instructions!
- Selected premium grade balsa and tough hard maple parts!
- Precisely machined and sharply die cut parts!
- Ready formed dural gear and necessary hardware!

Check these specifications!
Top wing span: 60" Lower wing span: 52"
Wing area: 1326 sq. in. Wing loading: 10 oz./sq. ft.
Flying weight: 5¼ to 7 lbs.
Model weight minus R/C equipment: 4 lbs.
Controls as desired: Possible to have rudder, elevator, engine, tail wheel, wheel brakes, ailerons and flaps.

Custom "LIVE WIRE"
A truly Spectacular Multi-Channel R/C Model!
FOR USE WITH .25 TO .35 ENGINES AND 2 TO 8 CHANNEL RADIOS



A COMPLETE DELUXE KIT
$21.95

deBOLT MODEL ENGINEERING CO.
"Home of Design-engineered Models"
WILLIAMSVILLE NEW YORK U. S. A.

SEE YOUR HOBBY DEALER
IF NOT CONVENIENT ORDER DIRECT

This is indoor stock and not so easy to find. Heavier wood will make the plane tail heavy and since it balances perfectly now it would be wise to use the built up tail surfaces to save weight. At any rate, use light but strong wood.

We now come to the prop assembly which is made simple by use of a commercial 6" dia. plastic prop. Take a piece of 1/32" diameter wire for the prop shaft and bend a loop in it for the front motor hook. A needle-nose pliers will come in handy here. Then insert the shaft into the noseblock from the rear and slip a couple of small washers (sequins work out wonderfully) on it at the front and then the prop. Bend a U in the front of the shaft to fit over the prop and cement the shaft to the prop. A small balsa spinner will complete the assembly, but is not necessary for flying. If you have ever built any of the Strombecker plastic flying models you may still have the prop around somewhere. These props are the correct size (6" dia.) with a spinner molded on, and also have provision for a freewheeler.

Now, the plane is completed except for covering. Covering is easy if you don't try to rush it. We'll start with the tail surfaces just to get warmed up. Use a bright color tissue to make the plane visible and also to hold down the weight by eliminating the need for colored dope. Take some clear dope and brush it all around the outline of the stabilizer and let it dry. While it is drying, we'll cut out a piece of tissue that is roughly one half inch larger than the stabilizer all around. By now the dope on the stabilizer is dry and you can lightly sand the structure to remove the fuzz and make it smooth. This coat of dope fills the pores in the wood and prevents the dope that you will put on as an adhesive from soaking into the wood before the tissue is attached. The whole airplane is treated this way before covering.

Getting back to the stabilizer, we now brush another coat of dope around the outline and then attach the paper to the stabilizer. Pull it up so there are no wrinkles, but not too tight. When it has dried, trim the excess paper away with a razor blade and cover the other side in the same manner. The rudder is also covered in the same manner as the stabilizer. After covering is completed spray with water just enough to dampen the tissue. When it dries, it will pull tight and then one thin coat of clear dope is applied. As the tail surfaces are thin, we must try to minimize warping and going easy with the dope is a good way to do it.

The wing is covered just like the tail surfaces but using six separate pieces of tissue. One for the top and bottom of each wing panel. Just cover each wing panel as if it were the stabilizer and you will have no trouble. When covering the bottom of the center section, you will have to punch the landing gear wires through the tissue. Another point to remember is to cover with the grain of the tissue running along the span of the wing or stabilizer and the length of the fuselage. The wing should have at least two thin coats of clear dope.

Begin the covering of the fuselage by doing the top. Since there are no compound curves you can wrap the tissue around from one side to the other. After trimming away the excess tissue the sheet balsa sides and bottom now get covered. All you have to do is lay the tissue over the side to be covered and dope through the tissue to make it stick to the wood. When the fuselage has been completely covered, spray the top with water. The fuselage then gets about two thin coats of clear dope.

Since we have used colored tissue to hold down the weight, the letters and other

HERE IT IS!

THE NEW AND REVOLUTIONARY IN RELIABLE RC WORK

FROM ESSCO RC PRODUCTS — THE RC CENTER U.S.A.

Many pages of advertising "poop" could not tell the story of the "FABULOUS" ESSCO THT receiver. Hundreds of unsolicited letters from users all over the world testify to its fantastic flight proved reliability. The ESSCO THT is the only receiver on the market today that has checked out OK to reliably perform for 10-12-15 hour world endurance flight attempts!!! You may never go after these extended records but you certainly can use a receiver that, when installed in your model allows you to forget all about radio problems. The STD Essco THT is supplied with either the MICRO GEM or the new paladium contact RBM. (Ideal for proportional control work). Supplied with sandwich type assembly or with crash proof aluminum case. State preference with order, either type $21.95

Experienced modelers will agree that the most popular RC single channel receiver during the past 6-7 years has been the LORENZ 3 tuber. We believe that more modelers started in RC and clocked more hours of trouble-free flights with the ESSCO LORENZ than with all other Lorenz type sets combined. The beginner RCer cannot do better than to start in RC work by using the super value ESSCO ECON-LORENZ receiver. The special low price is not a true indication of its extreme value. The material used in this special set is equal to and probably superior to that used in sets selling for a much higher price. Purchase a set on a 10 day money-back guarantee and see for yourself. You will wonder how any American mfr. could put out such superior quality at such a low price. THE STD ESSCO ECON-LORENZ in UNI-Mt assembly 15.95
DELUXE MODEL with aluminum crash case & min-pot 15.95
Both models supplied with std GEM or RBM relay. Standard model kit $10.95; DELUXE MODEL.. 12.95
Kits complete with all parts & tubes, no extras req.

Looking for a more reliable relay for proportional or regular escapement work? Essco has it for you . . . Features paladium non-pitting X-BAR contacts. (See Ed Lorenz' column in July MAN pgs. 18-19*). Ultra sturdy coil and solder lug construction. Small 1 oz. wt. Convert your dual proportional etc. receivers and obtain trouble-proof performance. 5000 ohm 5.75

Simultaneous proportional elevator and rudder control by means of the Q/C method is due to become more popular with the RCers with the "lean" budget. John Worth's articles in July-Aug-Sept MAN should be followed for a well written discussion of this tried and proved method of "life like" model flying. For several years the ESSCO MINI-PULSER (non stick type) has been the industry's best buy. An improved model of the MINI-PULSER with stick controls is now ready at only 26.95
The deluxe build-it-yourself kit 19.95
Top Quality parts to build WORTH unit at best prices

For the Modeler with the "lean" budget the up to now average $250-$300 investment for multi-channel work must remain a dream. Understandably dual simul 8-10 channel is costly but, ESSCO always known for bringing high quality RC at low costs has cracked this problem . . . Now available a TOP QUALITY DUAL SIMULtaneous 8 chan. XMTR that will operate all presently mfrd. reed receivers. Features ground case or hand held operation with remote control stick box. Powered by heavy duty regulated power pack & battery. The finest components available are used exclusively, and assures years of trouble-proof & non-piddling operation. Unique transformer coupled multi-stage circuitry in audio and RF units never before supplied for RC work. ABSOLUTELY, COMPLETELY RELIABLE. Model DS8XP complete with power supply $104.95
Model DS8XB complete XMTR for dry battery operation 84.95

COMING SOON COMPANION RECEIVER AT STARTLING PRICE

WHAT'S NEW IN TRANSMITTERS? Essco as always first with the latest in RC developments. The fear of the crystal oscillator "kicking out" has always been the one weak link in reliable RC work. This is especially true of the single stage XMTRs and some extent with present MOPA XMTRs. Ultra reliability can only be achieved by multi-stage circuitry as used in commercial and Govt. equipment. ESSCO's NEW SUPER DUPER FIVER is the first RC XMTR to feature this reliability in transmitters. Some will say why waste the additional power required to achieve this operation? We say that nothing is wasted to assure the safe return of your model. The use of a high capacity cell for powering the XMTR power unit makes for low cost and dependable operation. This new XMTR features hand held or ground case operation as preferred. Wt. is under 6 lbs. less antenna. Comes complete ready for use with new Willard ER-40-2 cell and power unit, only.... 39.95
Special model for 50-54 mc operation..... 44.95
First time available, exclusive with ESSCO. The power packed heavy duty Willard ER40-2. A compact 2 volt 40 amp. cell to power your XMTRs etc. Only 2¼ x 6⅝ x 4¼H. Will replace the now non-available BD54A units and will fit most XMTRs. Comes with electrolite filler and complete instructions for filling and recharging. Get a couple while available at the special low price. 5.95
The ESSCO BCSB all purpose battery charger will recharge the ER40-2 as well as most other types used in RC. 7.95
Reliable Operation of reed receivers requires the use of stable audio tone modulators. Many RC XMTRs now used can usually be used for reed operation by use of a stable modulator. The ESSCO MULTI-TONE Modulator allows you to go multi without having to purchase new XMTR gear. Modern design, stable non-drift tones obtained by use of HI Q inductor with efficient transformer coupling. Complete modulator for 3/5 channels ready for use in your present equipment. 24.95

ESSCO NEW YORK
58 WALKER STREET
NEW YORK 13 N. Y.
Telephone WA 5 8187

BUY ESSCO RC PRODUCTS
at your local dealer
PROMPT FRIENDLY SERVICE
Complete set of Catalog on RC

If not available at your local shop order direct from listed dealers or New York office for FAST SERVICE Incl. postage & obtain FREE BONUS

Alaska, Fairbanks—"Servicing the Far North"
HOBBY HOUSE, 120 Lacey Street
California, Los Angeles
COLONEL BOB'S ,3707½ West Pico Blvd.
California, North Sacramento
C & M HOBBY SHOP, 1613 Del Paso Blvd.
Connecticut, Bridgeport
FRED'S VARIETY STORE, 1743 E. Main Street
Connecticut, Danbury
HOBBY HOUSE, 278 Main Street
Connecticut, Darien
TOBY'S HOBBC CENTER, 1032 Post Road
Delaware, Dover—"Gateway to the World"
MACK'S HOBBY CENTER, 30 Loockerman Street
Florida, Miami—"Fast Service to the South"
ORANGE BLOSSOM HOBBIES, 1106 N.W. 36th St.
Florida, Fort Lauderdale
STAR HOBBIES, 1000½ East Las Olas Blvd.
Louisiana, New Orleans
HUB APPLIANCE & HOBBIES, 2618 S. Broad St.
Michigan, Detroit
JOE'S HOBBY CENTER, 9810 Wyoming Avenue
Michigan, Jackson
HOBBY HUB, 322 Francis Street
New Jersey, Clementon & South Jersey
CLEMENTON MODEL SHOP, 21 Gibbsboro Road
New Jersey, Parsippany & North Jersey
RICH'S HOBBYTOWNE, U.S. Route 46
New Jersey, Perth Amboy
FISHKIN BROS. HOBBIES, 285 Madison Avenue
New Jersey, Collingswood-Camden
COLLINGSWOOD HOBBY SHOP, 648 Haddon Ave.
New York City, Bronx & Westchester
BROWN'S HOBBY CENTER, 6051 Broadway
New York, Niagara Falls—Servicing South Ontario
FRED'S HOBBY SHOP, 2440 Pine Avenue
Nebraska, Omaha
OLSON & CLARK HOBBY CENTER, 6113 Maple St.
Ohio, Akron—"Largest RC Stock in North Ohio"
LAKE HOBBY SHOP, 580 Portage Lakes Drive
Oregon, Portland & Pacific Northwest
BOB'S MODEL SHOP, 8023 N.E. Union Avenue
Pennsylvania, Allentown—"Everything in RC"
GENE BLOCK'S HOBBIES & PAINTS, 22 No. 8th
Pennsylvania, Bristol
BRISTOL MODEL SHOP, 1031 Pond Street
South Carolina, Charleston
MODELHOBBY, P.O. Box 435
Virginia, Richmond—"Fullest RC Stock in Dixie"
THE HOBBY CENTER, 3029 West Cary Street
Wisconsin, Milwaukee
AL'S HOBBY SHOP, 2725 West North Avenue

the LINDBERG line

Leaders in Authentic

Plastic Construction Kits

LINDBERG PRODUCTS, INC.
SKOKIE ILL.

NEW from PERFECT

CONTROL LINE KIT

Extra body gives firmer grip. Perfectly balanced. Exclusive "line wrap" feature. Has 54 ft. Dacron line, 2 connectors.

59c

Handle Only, 29c

There's Been a New Addition To Our Line!

The Citizen-Ship

ACTUATOR (Servo)

Built-Up Models
HRH-2R2H-1R3H-3R
$14.95 each
Kit $11.95

It's Revolutionary!

With pleasure, we announce the addition to our line, the Citizen-Ship Motor Driven Actuator (servo), a basic unit which can be made up into 4 DIFFERENT actuators (servos.)
We are pioneering a "do-it-yourself" kit from which you can build any one of 4 types or convert as you progress. Available in built-up or kit form . . . will not become obsolete!
Actuator for multi-channel equipment requires only 7-prong plug.

- ***Weighs Only 3 Ounces.***
- ***Exceptionally Low Current Drain.***
- ***Fast and Powerful Action.***
- ***Mounts in Any Position.***
- ***Adjustable Bell Crank.***
- ***Printed Circuit Switching.***

Write for Free Catalog Sheets

Citizen-Ship Radio Corp.
820 East 64th St. Indianapolis, Ind.

NYLON PROPELLERS

Safe? . . . at any RPM of today's engines! Tornado NYLON Propellers are almost unbreakable . . . even in ground loops and belly landings.

Rigid Enough? Yes . . . holds shape and top efficiency even under strain of "maneuvers!"

Flexibility? . . . greater than wood.

FUEL PROOF Chemically inert to all special and standard fuels.

WEATHER? Hot?. summer heat cannot soften. Cold? not brittle at sub-zero.

SMART COLORS Just dip in any boiling type Nylon dye. *Beautiful. Bright. Permanent*

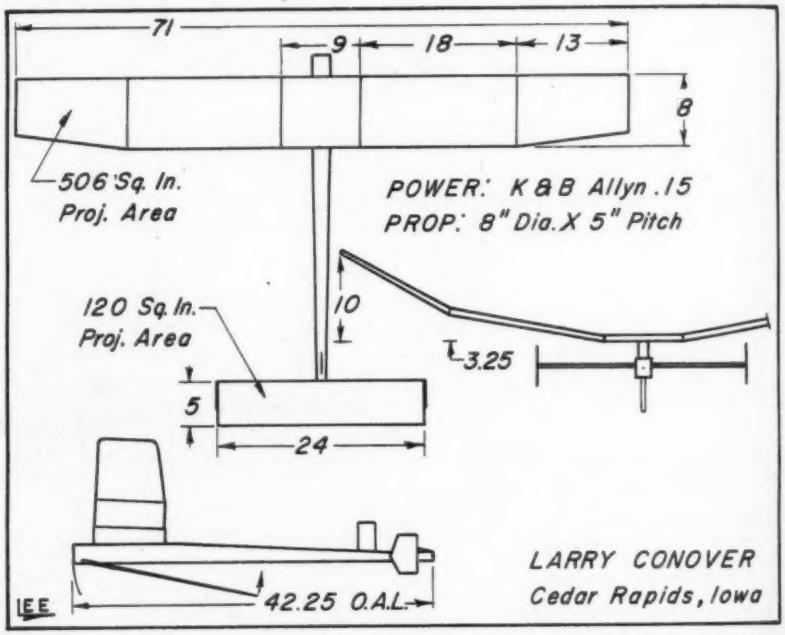
2 Blade Tractor	
5-3, 5-4, 5½-3, 5½-4, 6-3, 6-4	25¢
7-4, 7-6	40¢
8-4, 8-6	60¢
9-4, 9-6, 9-7, 10-4, 10-6	85¢
11-4, 11-6	$1
2 Blade Pusher	
5½-3, 5½-4, 6-3, 6-4	25¢
3 Blade Tractor	
5-3, 5-4, 6-3, 6-4	50¢
3 Blade Pusher	
6-3	50¢

GRISH BROS. St. John Indiana

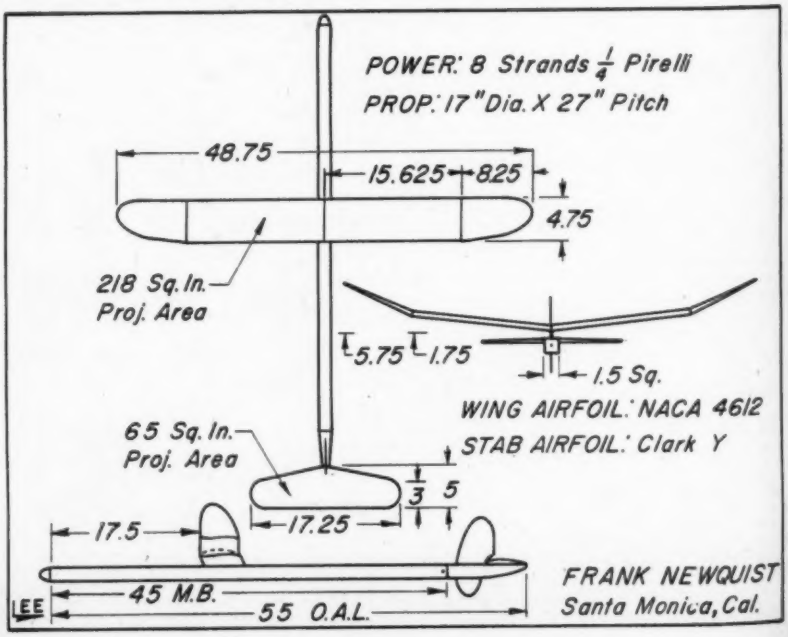
MORE THRUST from ENGINE TORQUE

trim are cut from black tissue and doped on with clear dope. Hold the letter or trim in place and dope over it, the dope soaking through will hold it in place. To get nice letters, trace the outlines of the letters shown on the plan onto a sheet of paper for a pattern. Stack as many layers of black tissue under the paper as you need letters, and cut around the pattern with a sharp razor blade. The control surface outlines are 1/16" wide strips of black tissue. After the plane is trimmed it is cemented together. Take care that everything is put on straight and true. The landing gear is completed at this time by sanding round a piece of 3/16" sq. balsa and a piece of ¼" sq. balsa. Cut two pieces from the 3/16" round each ¾" long and push them over the 1/32" landing gear wires. From the ¼" round cut two pieces each ¾" long and push them over the remainder of the landing gear wires. There should be about ¾" of wire remaining and this is bent over for the wheel axles. Dope the landing gear black. Put the 1" diameter wooden wheels on the axles and retain them with a drop of cement. Bend the tail skid and cement it in place. Cut out the windshield from thin celluloid, using the pattern on the plans and cement it in place. The plane is now ready for the motor which is four strands of ¼" brown rubber 9" long. Before installing it in the plane, wash it to remove the powder and then, when it is dry, lubricate it. We find that a 50-50 mixture of green soap and glycerine works well. It is obtained at a drug store and the druggist

(*Continued on page* 48)



Three-views of the last of eight U.S. international team models, others in earlier issues MAN.



BRAND NEW!

JUST OUT!

Strongest Props Made!

TOP FLITE

9-6 and 10-6 NYLON props

that are indestructible under normal use!

These marvelous props were perfected after more than a year of intensive work in design and development! They are the strongest props made! Field tests prove they will outlast any other kind almost 50 to 1, reducing the cost per flight to the absolute minimum. They are flexible, heat-proof, fuel-proof and have a super high gloss finish. They deliver the best all around performance of any prop!

85c each

EXCLUSIVE SAFETY TIP STRIPES!

The Safety Tip Stripes in contrasting bright red indicate the extreme tip of the prop to help prevent accidents. And this trim adds beauty and lots of dash, too!

1/2-A NYLON PROPS
4 sizes: 5¼-3 6-3 5¼-4 6-4 **25c** each

TOP FLITES and POWERPROPS

the PROPS OF CHAMPS

deliver the MOST THRUST from ANY engine . . . more flights per prop, too!

All of these props are designed with highly efficient airfoil and perfect pitch to give the most thrust from any engine. Every one is precision made, molded to round leading edges, thin trailing edges, and perfectly balanced to give maximum aerodynamic efficiency.

There are 81 precision engineered props of nylon, wood and plastic in the size and pitch best suited to your engine and plane in our line . . . the most complete and most widely used in the entire industry!

There's a TOP FLITE or POWER PROP for EVERY flying need:

- Radio Control
- Free Flight
- Combat
- Sport Flying
- Speed
- Stunt
- Payload
- Scale

- get a new, up-to-date FREE PROP CHART at your hobby headquarters or write us direct.
- get these PROPS OF CHAMPS at your favorite hobby store.
- made by the makers of "Dyraflame" Aluminum-Bonded-To-Balsa Kits.

TOP FLITE

TOP FLITE MODELS INC.
2635 S. WABASH AVE.—CHICAGO 16, ILL.

Our world famous wood props

New Sizes for the .020 Engine

15c each
TOP FLITES: 4½-3, 4½-4, 4½-5
POWER PROPS: 4½-6, 4½-7

20c each
TOP FLITES: 6-3, 6-4, 6-5
POWER PROPS: 5¼-3, 5¼-4, 5¼-5, 5¼-6, 6-3, 6-4, 6-5, 6-6

25c each
TOP FLITES: 7-3, 7-4, 7-6, 8-3½, 8-5, 8-6, 8-8, 9-4, 9-5, 9-6, 9-7, 9-8, 10-3½, 10-5, 10-6, 10-8
POWER PROPS: 7-4, 7-6, 7-8, 7-9, 7-10½, 8-4, 8-5, 8-6, 8-8, 8-9, 8-10½, 9-6, 9-8, 9-9, 9-10½, 10-6, 10-8

35c each
TOP FLITES R/C: 11-3, 11-4, 11-5, 11-6, 11-8, 12-3, 12-4, 12-5, 12-8
POWER PROPS R/C: 11-3, 11-4, 11-5, 11-6, 11-8, 12-3, 12-4, 12-6, 12-8

40c each
TOP FLITES R/C: 13-5½, 14-3, 14-4, 14-6

TOP FLITE PLASTIC PROPS

Molded, durable, mar-proof plastic that is also hot fuel proof. Gives longer life, makes engine starting easier.
5¼-3, 5¼-4, 6-3, 6-4
15c ea.

The World's Most Experienced Airline invites you to compete in . . .

PAA-LOAD EVENTS

for 1958

Move into the Jet Age with Pan American, which will introduce its Jet Clippers this fall. PAA-Load this year will concentrate on PAA-Load Jet, PAA-Load Junior Jet and Clipper Cargo in sponsored competitions in the U. S. and Round the World.

For 1958 rules and regulations, write to: Educational Director, Pan American World Airways, 28-19 Bridge Plaza North, Long Island City 1, N. Y.

PAN AM

X-acto® knives and interchangeable blades for woodcraft modelers

Dozens of blade styles instantly interchangeable in X-acto modeling knives. See your dealer's huge blade display. Packages of 5 assorted blades 60¢. Knife sets and blade assortments as little as $1.20.

X-acto®

Special Offer!

New Book "WOOD-CRAFT Modeling" and refill blade UTILITY KNIFE, only 25¢.

X-ACTO, INC.
48-53 Van Dam Street
Long Island City 1, N. Y.

will gladly mix it for you if you ask him. Cut a hole in the bottom of the fuselage at the rear motor hook location for access to the motor. Install the motor by dropping it through the fuselage from the front. Push the dowel through the loops at the rear and then hook the motor to the prop shaft and you are all set for flying.

Before flying we must first perform a few pre-flight checks. First, does your plane balance at the place indicated on the plans? If not, small bits of modeling clay placed on the nose or tail, whichever is lightest, will bring the plane into proper balance. Second, can you see any warps in the flying surfaces? They are easily removed by twisting the part that is warped in the opposite direction and holding it over a steaming tea kettle for a few seconds. Small warps in the tail can be removed merely by breathing on them and twisting them.

Hand glide the model a few times to check its flying trim. Don't push hard, just give it a gentle shove with the nose down slightly and aimed for a spot about 25 ft. in front of you. If the balance is perfect and the model tends to dive, warp the trailing edge of the stabilizer up. Do the opposite if it stalls. Incorporate a small amount of left rudder to produce a gentle left hand turn in the glide. Once you have accomplished the above mentioned procedures the rest is easy. Just wind it up and let it go. Try about 50 turns on the first flight and gradually work up to 200. The plane should swoop out in a left hand circle that is fairly tight and when the power is exhausted glide quickly down in a large left hand circle. If the plane has a looping tendency under power, try to tighten up the circle under power by bending the rudder more to the left. If this doesn't help then add a little down thrust. Put a paper match stick in between the nose block and the fuselage on the top to tilt the nose block down. If you have trouble with the nose block falling out, just build up the plug with strips of cellophane tape until it fits snugly and will not fall out when holding the plane nose down.

I'm sure you will have many enjoyable hours of flying with your Bebe-Jodel. It can be flown from playgrounds or ball diamonds with no fear of losing it. And it never fails to attract many spectators because it is so cute and flies so well.

Dumbo!

(*Continued from page* 9)

head stations on the crutch, then secure the half bulkheads in place. Notice, the crutch also includes the vertical fin line. A ⅜" sq. stringer ties in the bulkhead at the chine line; also, fasten the stringers on the balance of the fuselage where necessary, should sheet-balsa covering be used. These stringers are cementing points for the 1/16" sheet covering. Our fuselage was planked throughout, using 1/16" x 1/4" strip balsa.

The only portion of the hull that receives 3/32" balsa is the hull bottom; the balance is 1/16" covered. Proceed with the bottom and the lower portion of the aft hull. Install the wheel wells, bellcrank platform and bellcrank. When dried, secure the bolting arrangement for the wing in the pylon area. Be sure that a workmanlike job is done, since all the load of both flying and landing is centered at this point. Install the balance of the hull interior such as, the pushrod, removable nose wheel, and main gear screws. Apply the balance of the hull covering, plus the pylon block balsa.

When the hull is completely dry, use some medium grade sandpaper and remove

WARPLANE FANS!

EIGHT TECH MANUALS WITH PLANS, PHOTOS, DATA, FAMED PLANES.

TECH MANUALS 50¢ each.

B-25 MITCHELL
Best medium bomber WW 2, the ship used by Doolittle on Toyko raid from carrier.

B-24 LIBERATOR
Companion in arms to the B-17, the Liberator "heavy bomber" noted for range.

B-17 FLYING FORTRESS
The most famous of all the World War 2 warplanes, B-17 "heavy" was tough ship.

CURTISS P-40
From beginning to end, P-40's prominent in all theatres excepting the European.

F-86 SABRE
What the Mustang was to WW 2, the Sabre was to Korean war. Classy jet fighter.

F-94 STARFIRE
All-weather jet with tremendous rocket firepower, seeks out intruder by radar.

B-47 STRATOJET
More of these six-jet bombers in Strategic Air Command than any other machine.

B-29 SUPERFORTRESS
Great range, big punch, remote control firing system, made B-29 a super bomber.

AIR AGE INC.
551 Fifth Ave., New York 17, N. Y.

Herewith $..... for the following booklets in your TECH MANUALS at 50¢ each.

.....copies B25 .....copies F86
.....copies B24 .....copies F84
.....copies B17 .....copies B47
.....copies P40 .....copies B29

☐ Enclosed $3.50 for all eight copies.

Name .....

Address .....

City ..... State .....

all rough seams, blending all shapes to proper contour. Use balsa wood filler to patch pits and holes and blend fillet areas. Be sure to install the 1/16" wire pushrod prior to completing the pylon in this area. Note also, the pylon wing-rest is topped with a sheet of 1/16" plywood for obvious reasons. This guides the bolt and locating dowel pin.

Tail structure is conventional. Sheet balsa stock ¾" thick is employed for the horizontal surfaces. Mount the elevator horn offset as indicated in the plans, because the pushrod is mounted outside the hull. Cloth hinges tie in the elevator to the stab. Place a notch in the stab center section to slip fit the hull crutch; cut and trim until a reasonable joint is obtained. Cement the tail assembly in place, solder the pushrod to pivot in the horn. Shape the rudder from 1" balsa stock, or two laminated ¾" sections, and carve to fit the rudder post which is the back of the fin. Smooth, remove all marks, and cement in place.

To complete the hull, work the waist blisters, using a good, soft grade of block balsa. The completed blisters are hollowed to a ¾" wall; this operation is a must since it reduces tail heaviness considerably. When properly fitted to the after hull, cement in place with a good fillet around the seam.

Now to complete the hull and tail. To obtain a good finish a few basic steps must be followed. First of all, apply four coats of clear dope, light sanding after each application. Follow this with three coats of balsa sanding sealer here and, again, sand after each brushing. Now you should have a super surface to apply the pigmented dope. Silver is the color used; three brushings are applied. Sand lightly after the first two coats. All the hull details and glass areas are masked accordingly and doped black. Take time with the masking and a good result will follow. The hull bottoms are given a coat of dark blue. Adding the decals will complete the hull. Construction of the main gear is simple since a mono-strut is used. This member is Silver soldered to a disc of brass 1/32" thick and in turn held to the hull with three #3 round head wood screws. When completed, they can be fastened directly to the hull. Two assemblies are required.

With the hull complete and painted, proceed to the wing. To simplify and strengthen the wing a laminated leading edge is used. This member uses five laminations of, ¼" x 1" x 47" each, should include the dihedral angle prior to laminating. Assemble the two engine bearers as indicated from ¾" sq. hardwood. Slip these over the leading edge and secure in place, being certain they are positioned correctly. Fasten the lower wing covering using 1/16" sheet balsa and taper the trailing edges as shown. When dried, secure the ribs to their proper stations.

The wing center section carries two hard balsa blocks which receive the screw and dowel pin. Cement these in place and shape and conform to the rib pattern. Just aft of the bearers mount a pair of #6 Perfect fuel tanks, securing with balsa and cement. The top covering now is applied. Fasten the shaped firewall in place on the mounts and butt against the leading edge. Cement securely.

Prepare the nacelle components by first roughing to contour and rough fitting to the wing panel. When the proper fit is reached, cement the upper and lower nacelle blocks in place, followed with the after cowl. When dried, bring all surfaces to proper contour. The cowl block is similar in size to the cowl which is 2½' in dia.

(*Continued on page 52*)

The Amazing RX-1

ANOTHER FIRST FROM CharlieCG

ONE UNIT READY TO FLY

- NO WIRING
- NO SOLDERING

$34.95

The RX-1 was designed for both the beginner and the old timer R/C fan. It is the ultimate in simplicity and reliability requiring no electrical installation. Receiver is complete in every detail including escapement and tuning. Only 3 volts required. Place 2 pen cells in holder and off you go into the wild blue yonder. Nothing more to buy. Size 2½" x 3" x 2¼". Fits into ½A model. Weight 4 oz. with batteries. Uses no relay for the ultimate in reliability. Only $34.95 less batteries.

For free illustrated catalog write DEPT. MA 9.

CG Electronics CORPORATION DEPT. MA 9

15000 Central Avenue, SE Albuquerque, New Mexico

BALL-BEARING

The Famous ANDERSON "Spitfire" .65

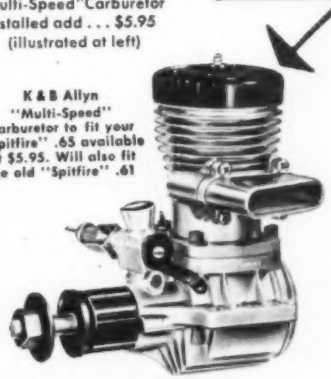
Now available in 6 MODELS to suit any need or preference.

GLOW MODEL
Ring Piston . $28.00
Lapped Piston 30.00
Either of above models with K & B Allyn "Multi-Speed" Carburetor installed add . . . $5.95 (illustrated at left)

NEW
Machined Cylinder Head with hemispherical combustion chamber. Anodized blue.

SPARK IGNITION MODEL
Ring Piston . $30.00
Lapped Piston 32.00
(Less coil & condenser)
Coil $4.00
Condenser 50

K & B Allyn "Multi-Speed" Carburetor to fit your "Spitfire" .65 available at $5.95. Will also fit the old "Spitfire" .61



COMING SOON! TWO-SPEED IGNITION TIMER

Exhaust Manifold Speed Control Accessory . . . will screw on in place of present exhaust. No straps, no fittings. Set ew for low speed idle.

All Spitfire Engines are guaranteed against defective workmanship and materials for the life of the engine.

See your dealer or order direct—complete information sent on request. California residents add 4% sales tax. Will ship C.O.D ppd. if payment included with order.

Northern California Distributor—PACIFIC HOBBY SUPPLIES, 3344 Grand Ave., Oakland 10, Calif.

DEALER INQUIRIES INVITED

PARTS & REPAIR SERVICE AGAIN AVAILABLE FOR SPITFIRE .61 & .65

Write for Parts List.

McCord PRECISION PRODUCTS

P. O. Box 2367, Anaheim, Calif.

At last! a gas flying model of the "SNARK" GUIDED MISSILE

ACTUAL PHOTO OF MODEL BUILT FROM KIT

ONLY $2.95

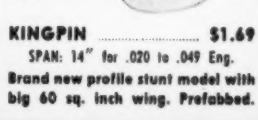
FLY IT U-CONTROL It's positively electrifying! Scientific brings you the world's first "space age" GAS FLYING MODEL . . . the 5000 mile U.S.A.F. "SNARK" Guided Missile. Yes, you'll fly-it-yourself . . . using just about any ½A gas engine (.049 to .09). If you like action! If you like a fast, terrific performing model — then the "SNARK" is for you! It's long — a big 21" in length. With a big 22" swept wing. Easy to fly? YOU BET! And to get you flying fast, we've super prefabricated the "SNARK" with a fully carved missile fuselage, and all parts ready cut, formed or shaped for you. Be the first Space Age flyer in your group . . . See your dealer for your SNARK GUIDED MISSILE!

. . . be specific, say **SCIENTIFIC**

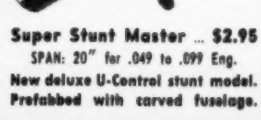
If no dealer is available, add 25c (postage & packing) to cost of model

SCIENTIFIC MODEL AIRPLANE COMPANY
113 MONROE ST. • NEWARK 5, N. J.

Copyright 1958 Scientific Model Airplane Co.



KINGPIN **$1.69**
SPAN: 14" for .020 to .049 Eng.
Brand new profile stunt model with big 60 sq. inch wing. Prefabbed.



Super Stunt Master ... **$2.95**
SPAN: 20" for .049 to .099 Eng.
New deluxe U-Control stunt model. Prefabbed with carved fuselage.

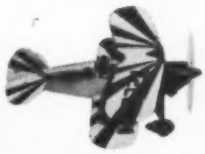
Gee Bee Sportster **$1.95**
SPAN: 18" for .020 to .074 Eng.
New U-Control scale flying model. Prefabulous! Carved balsa fuselage!

North American
F-51 MUSTANG
$2.95
Big 23" Wingspan. Scale U-Control flyer for .049 to .099 eng. Prefab.

STUNT MASTER $1.69
SPAN: 18" For .035 to .099 Eng.
Very popular ½A stunt plane. Highly colorful . . . terrific action. Super prefabricated kit.

AIR CHAMP $2.95
SPAN: 18" For .049 to .099 Eng.
Deluxe' U-Control biplane stands up to much rugged flying. A real beaut. Profabbed, carved fuselage.

F7U CUTLASS $2.50
SPAN: 18" For .020 to .074 Eng.
Sensational fly-it-yourself model of 700 m.p.h. jet fighter. Fly it U-Control. Prefab. Carved fuselage.



LITTLE STINKER $2.95
SPAN: 16" For .020 to .074 Eng.
"Pitt's Special" championship stunt flyer. Highly colorful model. All prefabbed kit.

LITTLE MUSTANG $1.95
SPAN: 18" For .020 to .074 Eng.
Famous escort fighter model. Completely prefabbed. Features carved balsa fuselage, formed balsa wing.

E-Z TRAINER $1.29
SPAN: 18" For .039 to .074 Eng.
Big value deluxe profile trainer with "jet fighter" styling for U-Control. Prefab w/bubble canopy.

Choose Your Favorite Model!

BUT BE SPECIFIC . . . SAY "SCIENTIFIC"

ZIG-ZAG $1.69
SPAN: 18" For .020 to .074 Eng.
Fast! Colorful! Here's a rod hot U-Control model with real get up and go! Prefab. Carved fuselage.

F4U-5N "Corsair" $1.50
SPAN: 18" For .020 to .074 Eng.
Profile fly-it-yourself model of this famous WW II fighter. It's U-Control, flies like a dream. Prefab.

P-40 Flying Tiger $2.50
SPAN: 18" For .020 to .074 Eng.
Our popular U-Control model of this Curtiss World War II fighter. Prefabbed with carved fuselage.

GOLDEN HAWK $1.95
SPAN: 18" For .020 to .074 Eng.
Big expansive wing . . . extremely colorful model for U-Control flying. Carved fuselage, prefabbed.

B-66 Jet Bomber $2.50
SPAN: 18" For .020 to .074 Eng.
Famous Douglas jet bomber that you fly U-Control. Drops bomb in flight. Prefab. Carved fuselage.

SPORT RACER $1.69
SPAN: 18" For .020 to .074 Eng.
A good U-Control performer at a remarkably low price. Completely prefabbed kit. Easy to assemble.

Stuka Dive Bomber $2.50
SPAN: 18" For .020 to .074 Eng.
Something new! This U-Control thriller drops bomb as you fly. Prefabbed with carved fuselage.

No. Am. Trainer $1.50
SPAN: 18" For .020 to .074 Eng.
North American's U.S.A.F. T-28 training plane. Now you fly it U-Control. All prefab., profile model.

Beech "Bonanza" $1.95
SPAN: 18" For .039 to .074 Eng.
A real "beaut" of a model. It's authentic scale. . . . for U-Control flying. Prefab. Carved fuselage.

Cessna 182 Tricycle $1.95
SPAN: 18" For .039 to .074 Eng.
Scale fly-it-yourself model of famous private plan. All prefab w/carved fuselage.

BRITISH S.E.5 $2.50
Bi-Plane For .020 to .074 Engines
Exciting U-Control gas flying model of this British World War I ace fighter. Prefab with carved fuselage.

BULLET $2.95
SPAN: 24" For .020 to .099 Eng.
Bullet-like styling . . . bullet-like performance. Big 24" wingspan on this U-Control thriller. Prefabbed.

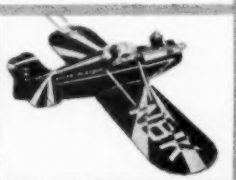
FORD FLIVVER $1.69
SPAN: 18" For .020 to .074 Eng.
Prefabulous U-Control flying model of Ford single seater. All prefabbed with carved fuselage, etc.

No. Am. "Texan" $2.50
SPAN: 18" For .020 to .074 Eng.
Authentic scale model of the USAF AT6 Trainer. A top-notch "fly it yourself" model. All prefabbed.

RED FLASH $1.69
SPAN: 18" For .039 to .074 Eng.
Fast! Colorful! U-Control thriller that's easy to fly and a cinch to assemble. Super prefabricated.

Piper Tri-Pacer $1.95
SPAN: 18" For .039 to .074 Eng.
Scale U-Control flyer with a tricycle landing gear for safe landings. Prefab, carved fuselage.

Torpedo Speedboat $2.50
For Gas Powered OUTBOARD Eng.
Length 20", Beam 8"
Genuine mahogany veneer hull. A real speedster. All prefabricated.



Stits "PLAYBOY" $1.95
SPAN: 18" For .020 to .074 Eng.
One of our hottest looking and performing U-Control planes. Styled from Goodyear Racer. Prefabbed.

AMERICAN BOY $1.29
SPAN: 18" For .020 to .074 Eng.
Extremely popular U-Control trainer at a big bargain price! It's profile and all prefabbed.

MR. MULLIGAN $2.50
SPAN: 18" For .020 to .074 Eng.
Scale flying model of famous trophy race winner. U-Control. Prefabbed. Carved fuselage. A real thriller!

"ELDORADO" $1.69
14½" Long. For Elec. Outbd. Mtrs.
Fast, sleek speedboat — really modern w/wrap-around windshield & swept wing fins. Prefab.

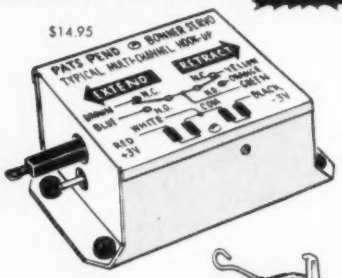
AT YOUR DEALER . . . be specific, say **SCIENTIFIC**

SCIENTIFIC MODEL AIRPLANE COMPANY
11[illegible] MONROE ST., NEWARK 5, N. J.
[illegible] add 7¢ postage & packing to cost of model

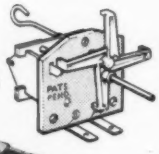
Copyright 1958 Scientific Model Airplane Co.

Bonner R/C PRODUCTS
SEE THEM AT YOUR DEALER'S NOW!

$14.95



$5.95



$8.95

Widely known for their perfection, performance, and reliability, BONNER products are the unanimous choice of active model fliers and contest champions.

There's a BONNER actuator tailored to every control in all of the popular types of R/C systems. "Check them out" at your local hobby shop today.

FREE R/C DATA, SEND STAMP "IN R C IT PAYS TO USE THE BEST"

BONNER SPECIALTIES 2900 Tilden Ave. Los Angeles 64, Calif.

New Catalog, over 300 pages, your BIGGEST SOURCE OF SUPPLY. Send for it on your letterhead. We sell to dealers only, 100% wholesale. FAST SERVICE ON ALL ORDERS.

★ MODEL AIRPLANES
★ CRAFTS ★ TOYS
★ RAILROADS

HAW-KI HOBBY SUPPLY

Dept. N 523 West 4th Davenport, Iowa

DEALERS HOBBY SUPPLY

Dept. KC-N 2940 Southwest Blvd. Kansas City 8, Mo.
P. O. Box 10061 Memphis, Tenn.
P. O. Box 506-N 510 E. Sixth St. Des Moines, Iowa
P. O. Box 10353-N 2009 Farrington Dallas, Texas

The next step is to transfer the holes from the pylon to the wing bottom for proper alignment. Place in the pylon holes two dowels that have been shaped to a 45-degree point. Draw a line around the center section of the wing, then place the wing on these points, being certain the wing is properly positioned; force down on the dowels and there you have it. Remove the wing and dowels, drill the wing holes to proper diameters. Fasten a ¼" dowel to the trailing edge hole protruding ⅛" from the wing bottom. The forward hole receives the 10-32 screw.

Complete the finish of the wing in much the same manner as the hull; finish complete up to installing the decals and line trims. The cowlings and tip-float assemblies are completed with the installation of the floats to the wing tips. The actuating rod, radius struts, and panels are clearly positioned on the plans.

Prior to installing the cowls, install the engines and fasten the fuel lines. Proceed to clear portions of the cowl to fit the cylinders and needle valves. The cowls are fastened to the motor bearers with #3 wood screws. The struts that are fastened to the model are there to further add to the scale, and serve no structural purpose. Secure the wing to the hull with two washers under the head of the 10-32 mounting screw. We are set to fly!

With the flying of twin-engined models, it is important that the port engine (left) runs longer than its mate. This always will keep the lines taut. A few ground tests with the fuel metered proportionately to each tank will avoid a costly error. You should have a model that will handle superbly. For water flights, remove the nose wheel and main gear, install a pair of dummy wheels in the wells with #3 wood screws. The flier should start with 100 ft. circles and proceed to greater diameters. We found a 150 ft. circle most suitable.

French Oldtimer

(*Continued from page* 30)

length of fuselage; remove from work board and cement remaining half formers and master stringer to other side. Cement ¼" plywood firewall in place after drilling mounting holes to suit engine used. Plans show location and correct down-thrust for Wasp; if engine other than Wasp is used it may be necessary to relocate firewall to properly clear prop from cowling.

Main landing gear is of 1/16" wire cemented securely to Former C; cement ¼" square balsa reinforcement over wire where it passes though fuselage. Cement auxiliary wire strut to front keel. Slip axle through auxiliary strut fitting; wrap wire connections with thread and cement well—or solder if you prefer.

Wing construction is conventional except that cockpits and a portion of fuselage is built onto wing. After adding dihedral, pin wing temporarily to fuselage framework and add formers C-Top, W-1, W-2, W-3 and W-4. Wing and cockpit section is removable from fuselage, being held in place by rubber bands and dowels. Cover wing-fuselage-cockpit combination with 1/16" sheet. Fuselage from former "C" forward is also covered with sheet. Leave bottom of cowling open.

Tail surfaces are also conventional construction with addition of cap strips to give airfoil shape. Sand entire framework with fine sandpaper—remember that covering will be no smoother than framework under it so use a little care here.

Model can be covered with Silkspan, tissue, or a combination of both as on original model. Our model was covered as follows:

One Bite... on Tight!

for ⅓ A's to 60's

Pat. Reg. 587-082

KWIK KLIP Engine Starter 39¢ ALL DEALERS

Start fast! Get *all* the power your battery offers . . . quick, easy. Tough, durable plastic, insulated. Good metal contacts, spring-pressure *tight*. Screw terminals to attach your wires. Get KWIK-KLIP today!

B&F Mfg. 8121 N. OLCOTT NILES 31, ILL.

$AVE $AVE $AVE

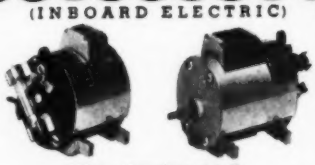
BARGAINS GALORE

FREE our booklet on ALL hobbies FREE

WORLD HOBBY CENTER

BOX 154, EAST PATERSON, N. J.

BOAT MOTORS
(INBOARD ELECTRIC)



100% American Made
• POWERFUL • DEPENDABLE
• LONG LIFE • EFFICIENT

PITTMAN
ELECTRICAL DEVELOPMENTS CO • HATBORO, PA.

NEW From PERFECT

Ready-To-Use GLO-KLIP BATTERY SET

60c
Completely assembled and soldered
Glo-Klip Solderless Connector..... 39c

Also Look For Perfect Fuel Line Fuel Tanks, Fuel Pumps, Wheels, Parts

wing and tail surfaces with gray tissue, fuselage with lightweight Silkspan. Actual color of the R.E.P. was all silver with exception of cowling and insignia. A half and half mixture of clear dope and cement is used for adhesive. After covering, wings and tail are given two coats of clear dope (if tissue covered) or three coats of silver if Silkspan covered. Fuselage receives three coats of silver, except cowling which is red. Red, white, and blue insignia can be doped on or cut from Trim Film. Complete finishing by two coats of fuel proofer and an additional two coats inside cowling.

Fuel tank is eye-dropper held inside cowling by rubber band wrapped around dropper and stapled to firewall. Make cutout in cowling top for access to glow plug. Unless your engine holds adjustment well, it will be necessary to use needle valve extension since valve can't be reached with motor running.

Balance model at front spar or not more than ¼" rearward of spar; add weight inside cowling if necessary to balance at this point or to tail if your ship is nose heavy.

Test glide over grass if possible. If model stalls, add thin shims of balsa or cardboard under trailing edge of wing between wing and fuselage. If glide is too steep add shims under leading edge of wing.

Put prop on backward for first power flights, run motor as slowly as possible and allow model to take off under its own power. We've found less chance of "pilot error" if model is allowed to take off unassisted since model will fly when it has reached proper flying speed.

Take off should be within 15 to 20 feet, with model going into a shallow left turn; if turn is too tight correct with rudder. If turn persists (which isn't likely) off-set motor to right. When "slow-flight" tested to your satisfaction, put prop on frontward and make final adjustments a little at a time until craft is performing to your satisfaction. The original model was very easy to adjust for a variety of flight patterns. It will fly equally well to either right or left under power and in the glide; it can also be trimmed to fly a straight flight and glide if you're a "cross-country man." Maybe the writer is getting a little old, but he prefers a slow circling climb and glide with the model staying well within quick retrieving range. If your preference is a wide-open motor run and fast climb this model will "get upstairs" with the rest of the scale jobs—and glide just as far. Good Luck!

Radio Control News

(*Continued from page* 29)

ing a false impression of improvement.

CLUB NEWS

Mr. E. Schoenberg, editor of the WRCC Newsletter, house organ of the Witchita Radio Control Club, 9204 W. Maple, Witchita, Kan. has some real interesting news. To promote precision RC flying throughout the central states, they have devised what is known as a Precision Correspondence RC Contest. Judging is on the honor system and interpretation of pattern rules outlined in Model Aviation, issue #2, Volume XXI, February 1958. Winner of contest is the club with the five highest individual fliers total. Rudder-only, intermediate, and multi will be flown.

The list of planes from this club is staggering. Seven fliers, including old timer Siggy Siegfried, have ships ranging from Astro-Hogs to a Buccaneer, an enlarged Live Wire, a scale Porterfield, and sporting everything from a 3-channel Babcock up to an 8-channel Orbit, including several WAG dual-proportionals. Intermediate is limited to modified Live Wires and Esquires, featuring Galloping Ghost and cas-

SEND ONLY $2.95

FOR THIS $11.95 BOOK

(remaining $9.00 to be paid $3.00 per month)

"AIRCRAFT OF THE 1914-18 WAR"

by Thetford - Riding - Russell

ONLY BOOK THAT COVERS ALL PLANES FLOWN IN WORLD WAR ONE

CLOTH BOUND

CONTENTS

Only book that contains not only all the Aircraft flown in World War One, but also hundreds of photos and drawings of rare and experimental type so hard to find. Book is cloth bound, 234 large 11 x 8 3/4" pages. 80 full page 1/72" scale plans shown of planes from USA, England, France, Germany, Italy, etc. Full page photos of Squadron line ups, plus half page and third page photos of each plane, in all over 200 photos. Full Dimensions, Weight, Armament, Performance, Power Plant, and constructional details are given for each plane, plus its Operational History. This book is of great interest to any who have flown these old planes, to any who are interested in the building of true scale Museum type models, and to those who simply like to see top notch photos and write ups about these, now rare, aircraft. This book is a collector's item. Book weighs almost 2 pounds. It is sold on a money back guarantee, after you have paid for the book in full, if not satisfied with it we will grant a full money back refund within 10 days after you have received it.

SAMPLE PAGES and Circular about the book above .....25c ☐

CHECK OFF THE FORM BELOW and PRINT your name and address in column this ad

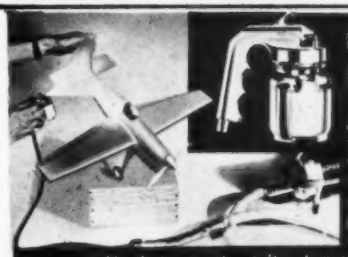
Please send me the 14-18 book above, I enclose full $11.95 ☐

Please place me on order for the 14-18 book above, I enclose only $2.95..... ☐
I agree to pay the remaining $9.00 in three monthly payments of $3.00 each

Also available "PLANSBOOK" contains over 1000 different plans, including hundreds of 14-18 Aircraft "PLANSBOOK" comes with $1.00 Credit Voucher which can be used on future purchases..... "PLANSBOOK" $1.00 ☐

"AEROMODELLER" magazine contains scale plans. Year sub. $4.50. Sample 25c ☐

Gull Model Airplane Co. 10 E. Overlea Ave., Dept. M Baltimore 6, Md.



for that "finishing touch"

hobby spray gun

operates from vacuum cleaner

The ideal spray gun for modelers, hobbyists and the *do it yourself fan* . . . paint your model planes, cars, trains, boats, display shelves, etc. For that "finishing touch" get the Hobby Spray Gun . . . and it's

only $3.95

• Simple to operate • Direct spray (minimum waste)
• One filling covers 10 sq. ft. • Nickle plated • No moving parts
• Always in adjustment

sprays dope • vinyl • lacquer • enamel • water base paint

Faster, Easier, with Smoother Finish

Comes complete with hose and attachment to vacuum cleaner

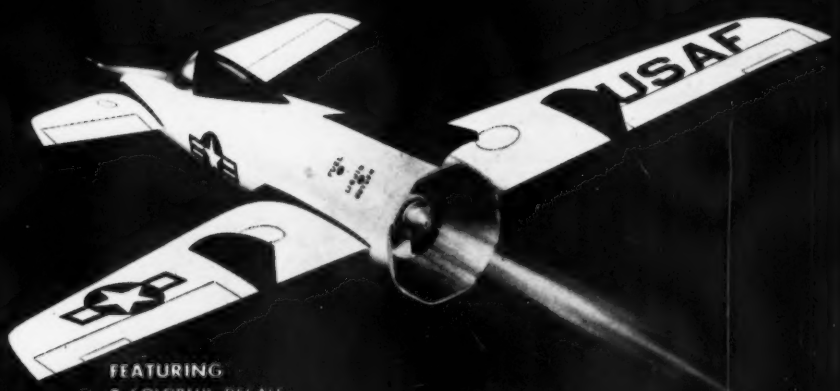
stewart / lundahl co., 7342 Fulton Avenue, North Hollywood, Calif.

FLY INTO THE FUTURE
WITH AMERICAN TELASCO'S

SPACE
"EXPLORER"

POWER
JETEX "50B"

WING SPAN
14"

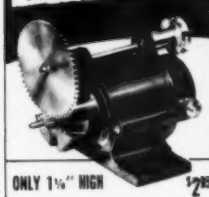


Realistic Performance
Without Equal!

ONLY
98¢
(less Engine)

FEATURING
- COLORFUL DECALS
- PLASTIC ACCESSORIES
- PRE CUT PARTS
- ILLUSTRATED DRAWINGS

"MIGHTY-MIDGET"



WORLD FAMOUS ELECTRIC MOTOR for HOBBY INDUSTRIAL & LAB. USE

ONLY 1¼" HIGH $2.95

Powerful for size • Armature speed: 4000-6000 r.p.m., Countershaft speed: 650-1000 r.p.m. • Current Consumption less than a flash-lite bulb • Self starting • Reversible • Precision built • Supplied complete with 7 to 1 reduction gears, pulley, etc. • Standard motor for use on 3-6 volts D.C. • Replaceable brushes fitted with terminals.

DISTRIBUTED IN THE U.S.A. EXCLUSIVELY BY
POLK'S HOBBIES, INC.
314 FIFTH AVE.
DEPT. MA, N.Y.C.1

GEM MICRO
Relays

WEIGH LESS THAN ½ OZ.
SIZE ½ H. 17/32 W. 1-1/16 L.
MOUNTING: ONE SCREW
COIL: 5000 OHMS
$4.95

DeLuxe . . . micrometer adjustment
RC You can adjust it in the field!
Same crash resistant construction.
Same high sensitivity and low contact resistance. Fine silver points.
Easy to maintain, same close tolerance as Gem Standard.
Additional tie-point terminals for mounting condensors and resistors.

7,500 & 10,000 ohms at extra cost
AT YOUR DEALER
GEM Standard, at new low cost $4.25

JAICO PRODUCTS 1321 N. HUBBARD CHICAGO 22

caded Varicomps. Rudder-only looks more like a scale event with J-3 Cub's, Aeronca's, a Corben Super Ace, a T-Craft, a ducted-fan flying saucer and many others. Here radio gear consists mainly of 2-tube gas tubers, Mac 2-tubers and Babcock Magic Carpets. The gliders range from 7' originals to a 13' original with Mac 2-tubers and Babcock and Serco-Les Wright units. Zongker, a Beech test pilot, and Justin Shumway, a Boeing wind-tunnel aerodynamicist have completed a nine page report "General Design Information for a Pylon Racer," available on request.

• • •

The North Jersey Radio Control Club, 269 Mulberry Place, Ridgewood, N.J. had a meet about the first of June, during which it rained, rained, rained. However, Maynard Hill, of Pittsburgh, took first in multi with 115 points, Ralph Jackson with 74⅛ points the intermediate class, and Dick Allen, of Endicott, N.Y., again walked off with first in rudder-only with 73-1/3 points. Art Gray won first in RC scale with 128⅛ points.

• • •

The Peoria RC Tattler, Box 1234, Peoria, Ill. tells of multi activity with Orbit, Bramco and CG equipment. Live Wires, Smog-Hogs and Astro-Hogs. At a get-to-gether last spring, this club had 31 members turn out with 80 planes!

• • •

Bill Kenyon, Syracuse Sky Knights, reminds all RC fliers in the east of their Hobo meet on August 9th and 10th. There will be a picnic for fliers only on the 9th. If you miss the Hobo Meet, plan on their Fall Fly For Fun Fair, September 27th and 28th, same deal without a furnished picnic. Contact Bill at R.D. #2, Manlius, N.Y.

• • •

Those California boys sure have their troubles with interference. If it isn't a traffic light control, it's a radio intercom at a new SAC base. One burst on 27.3 mc caught Dale Root midway through some horizontal rolls, but he managed to bring it down ok. Things could get rough in the Root household since Mrs. Jean Root is now in the winner's circle with a first place in the Mickey Mouse class using an original plane design, a Cox .049 and an Orbit single-channel receiver. The EBRC Carrier also points out that low wings, such as the Astro-Hog can gain a few points on ground maneuvers when working in the wind. . . . From the Channel Chatter of the San Leandro Channel Masters comes another plea to their club, and we think it holds true throughout the country, to be considerate of the other fellow when out flying. This is especially true of flying sites since they are becoming more rare in certain parts of the country. This club has a landing-strip committee who are investigating weed killers and paving oil.

Photo indicates the active membership of the Radio Control Modelers of Baltimore. Most fly Esquires. Radio gear varies. One big asset of this club is an abandoned airport within the city limits. For an east coast city this is a dream. Contact Mr. William E. Kocher, 3804 Parkmont Avenue, Baltimore, Md.

Mr. Thomas Lentz, 8 Justice Street, Chapel Hill, N.C. sent in some snapshots of planes taken at an RC/NC radio meet. Unfortunately, as with the majority of snapshots, these were not suitable for reproduction, but they did give an idea of the status of the art in the Carolina area. Of special interest was a scale SE-5 by Howard Payne, Kernersville, N.C. The ground shots were extremely realistic.

Smog Hogs, Ascenders, a Triple Threat (MAN), a modified Blitzen and Breezy Sr's made up the majority of ships with CG 5-channel equipment taking the lead over Schmidt and Orbit; servos mostly the new Bonner units.

• • •

Art Simmons, 124 Baker Avenue, Syracuse 5, N.Y. mentions that more progress can be made by a model club if they interest a public utility or other large corporation in their activities. The Niagara-Mohawk Power Corporation and the Magari brothers have gone all out in helping the Syracuse Skyknights gain recognition and help, otherwise difficult or impossible to obtain. The Magari brothers helped obtain the use of 100 acres of land which comes under the soil-bank plan. The Niagara-Mohawk Power Corp. donated the use of their auditorium for a meeting place twice a month and even helped put on an RC demonstration for the public.

• • •

NEW ITEMS

Awhile back we mentioned the problem of sticking relay contacts, due to arcing. ESSCO, 58 Walker Street, NYC took the hint and came up with a relay having palladium contacts. Only slightly larger and heavier than the familiar Gem relay, this 5,000 ohm unit features palladium bar contacts for minimizing trouble caused by arcing. This relay should prove highly successful in some of the new pulse controls now making the rounds. Price is $3.75 for the model RBM relay.

• • •

Looking for a simple, neat, compact telescoping antenna for a boat installation or miniature transmitter? A chrome-plated brass antenna and plastic carrying case is distributed (59¢) by Lafayette Radio, 165-08 Liberty Avenue, Jamaica, N.Y. Only 9" long retracted, it opens to 38" and has a sub-miniature jack and plug attached.

• • •

Photo shows the new model mechanical pulser manufactured by the Glass City Model Electronics Co., 726 Sherman Street, Toledo, O. Described in last month's column, this unit now is controllable from two to 14 pps and features complete linearity with no interaction. This $29.95 unit is said to be ideal for John Worth's Simpl-Simul system described in recent months. Their re-packaged transistorized pulse width/pulse rate device, is usable for true dual-simultaneous control of both rudder and elevator when using any good single-channel receiver and transmitter.

• • •

While on the subject of proportional actuators, a photo shows the Proportional Actuator, by Tomoser Electronics & Manufacting Co., 217 Vulcan St., Buffalo 7, N.Y. This 3¾ ounce unit is self centering, features nylon gears, phosphor-bronze contacts, a current drain of less than 300 mils from a 4½v supply and has the amazing thrust of over four pounds. An eccentric cam drive makes for a non-jamming action. Our bench tests showed a well operating unit, having every bit of the power claimed for it. Quite a few proportional addicts in the east have acclaimed this an amazing and well-built unit. No price at time of writing.

• • •

This next item should forever eliminate the cry of "I didn't have time to build a new one." Photo shows the new Babcock Tri-Pacer, a 37" all-plastic job, also suitable for free-flight or U-Control. Powered by any .049 engine, the overall weight is about 25 ounces and the kit is said to

WRIGHT BROTHERS
KITTY HAWK
New Model
98¢
First Powered, Man-Carrying Airplane to Fly! See your Hobby Dealer. Enter the Big Kitty Hawk Contest. Saving Bonds. Prizes. Awards. Airplane Trip.
Monogram
Four Star Plastikit

$64000 QUESTION
answered by
PYLON BRAND

Q. What can be done to prevent wear at lead-out wire holes on metal bellcranks?

A. CHANGE TO NYLON BELLCRANKS

Nylon Bellcranks give you smooth operation because they are self-lubricating, smooth with no burrs or rough edges to bind or grab. They are lightweight and strong . . . will not bend out of shape. Because the Nylon Bellcranks are non-abrasive, with smooth edge, uniform holes for lead-out control wires, they are guaranteed to outlast metal. This is another Pylon Brand product with an eye to safety and longer flight time for the model builder.

SEE THEM NOW AT
YOUR FAVORITE HOBBY SHOP

Sullivan Products
2300 STRATFORD RD., WILLOW GROVE, PA

MAX 15 R/C

O S

JETS
OS Mark II Jet $19.95
OS Jet Starter 7.95

Glo Engines
Max 35 Combatnik 13.95
Max 29 New Series 12.95
Max 15 MK II 9.95
OS Pet .09 ..... 4.95

R/C Glo Engines
Max 35 R/C Exhaust Th. ... 16.95
Max 29 R/C Exhaust Th. ... 16.95
Max 15 R/C Exhaust Th. ... 13.95

Escapements For R/C
2 Claw BH 3.95
4 Claw for Motor Control ... 3.95
Compound 6.95

Canadians – Order From Academy Hobbies 2884 Eglinton Ave. W., Toronto, Ont.

Dealers

OS Engines are an exclusive line of World Engines. We sell direct to dealers. Individuals can order direct (send $1.00 on C.O.D.) but see your dealer first. OS engines are found in Hobby Shops that especially cater to the model airplane builders.

OS engines are cleaning up the hardware in local contests across the nation particularly in combat and FF. R/C men like the power & long life of OS Engines. We are neither lowest or highest in price. We do have many quality features found in no other engines. Compare them, then buy your Max.

S

WORLD ENGINES
6700 MONTGOMERY RD.
CINCINNATI 36, OHIO

contain all plastic pre-formed parts, wheels, formed gear and complete Hollinger drawings. This $9.95 model was slated to hit the market in July.

While not exactly new, the use of spruce for building fuselage and wings offers much to the builder. Used almost exclusively in the early days of model building, it would be used to a greater degree today if builders knew where to get it. Sig Manufacturing Company of Montezuma, Ia. handles a very close grain spruce that will make for a light weight and high-strength structure. We have found a spruce fuselage with nylon covering practically indestructible.

• • •

Crescent Industries Inc., of New Freedom, Pa., offers a new seven pin plug and socket for one dollar. This is an in-line socket, three pins in one row and four in another. The socket also has two mounting holes spaced ¾" apart and the plug has a removable protective shield. Plastic parts are resilient enough to make this a near "breakproof" unit and just what you may be looking for to hook up servos and multi-channel equipment.

• • •

National Carbon Company, makers of Eveready cells and batteries has a new line of "Alkaline Energizers." Six sizes are produced, ranging from the D type cell down to pencell types. These cells are designed for heavy-duty, continuous-drain applications. Typical figures for a 1.5v D size cell (E-95) are with a 1-ohm load, 20 minutes to an end point of one volt, with a 2.25 ohm load, 480 minutes to an end point of one volt and with a 4-ohm load, 1,000 minutes to an end point of one volt. With a 10-ohm load, which is comparable to an actuator load, this cell will last 43 hours to an end point of one volt. Remember, these figures are for a single 1.5v cell and are continuous duty figures. Price of the E-95 (D size) is 75 cents and for the E-94, a half-size D case, the price is 50 cents. These look good for boats too.

Schneider Trophy Racers

(*Continued from page* 16)

mounting, while others used wood beam mounts or metal crutch plates. We decided that every model must be equipped with complete throttle control. John Brodbeck fitted the Torp .09 engines with rotating exhaust baffles plus provision for intake flappers. Actuation of the throttles was by Jim Walker's hollow air line and bellows system.

The first model ready to test fly was the Gloster VI and everyone was anxiously awaiting the results. As the .09's were still in the shop for throttle fitting, a K & B Torp .15 was installed for the test flight. We decided to first try flying off grass in the park as there was no suitable water site nearby. The lines were made 35' long of .012" diameter braided wire, and a calm morning picked for the first flight.

With the engine running perfectly, the model was released. It was found necessary to hold full up-elevator control to keep the front of the floats from digging into the grass and to allow the model to gather speed. In less than one quarter lap the model was airborne and began to move out like a hot Team Racer. Even with the large floats, the speed of the model was amazing. With no throttle control on the .15 engine the Gloster had to be landed dead-stick. The first landing was made like a normal team racer landing, and was much too fast. The result was two complete somersaults as soon as the model touched down. No damage resulted and the next landing was made by bringing the model down close to the grass and holding the nose high, mushing in at low speed. This resulted in a short and successful landing.

As soon as the .09's were ready, one was installed and the tests again were made on grass with very satisfactory results. The .09 proved to be almost as fast in the take-off and in flight as had been the .15 engine. All doubts as to the success of our venture were dispelled and the other models were soon ready for testing.

For our first water take-offs we found a spot with a point of land projecting out into a lake, allowing three quarters of a lap over water with the balance over a low gentle bank. The up control necessary for grass take-off proved to be very wrong for water take-offs as it caused the nose to swing out upon release, forcing the inboard float under water, with a dunking usually resulting. Also it was found necessary on the biplanes to move the lead-out wires forward and close together to stop this side swing. On some models with the smaller floats, it was necessary to move the lead-out guides ahead of the CG slightly. Best water take-off seems to be with half throttle and neutral control at release, then increased throttle and up control as the model gathers speed. For landings with plenty of water available, ordinary three-point approach is very successful. Some of our best flying sessions have been at places providing a full 360 degrees water area where we could make touch-and-go landings and fly several of the models at the same time.

For restricted areas indoors, the FAST Club designed and built a portable pool, 20 feet x 40 feet and 1 foot deep. Using 20 foot lines, we have almost one-half lap for take-offs and landings. This is where the throttle controlled engine is a must. The model must be slowed down to a walk by holding the nose high with up elevator, and with just enough throttle to maintain altitude so that when the edge of the pool is reached, the throttle can be cut and the model settles immediately into the water, usually coasting to a stop by the time it reaches the far side of the pool. Our pool consists of wooden planks set on edge and bolted together with steel plates to form the sides and the ends. A heavy plastic liner is placed inside to hold the water. This pool requires slightly over 5,000 gallons of water to fill up to within one inch of the top. A plastic ramp is placed over the edge of the pool at the point of take-off. Thus if one of the models fails to become airborne by the time it reaches the edge of the pool, the ramp boosts the model into the air without damage.

First models off the water are flown at low throttle setting until all models are airborne. Then the throttles are opened, and several laps flown at top speed. After the high-speed races, we made a few touch-and-go landings on the water, and then brought the models in for a slow speed, stalled-out landing.

The spectators at our shows have shown great interest in the display and the performance of our Schneider seaplane racers. Most of them have never before seen models take-off and land on the water, full scale seaplanes either, for that matter. They are quite surprised by the speed of the models and by the effectiveness of the throttle controls on the engines. Very satisfying to the FAST Club is the fact that so many people still remember and recognize these seaplanes. However, no one enjoys the water take-offs, the landings, and the occasional dunkings, nearly as much as the club members who are actually flying the models.

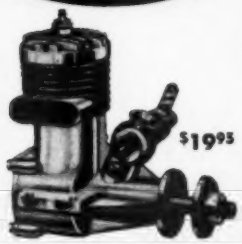
Not all of our members have been able

Look for the name that guarantees championship performance in...

- MODELS
- ENGINES
- BOATS
- ACCESSORIES

VECO products

Howard Benner's 1956 and 1957 National Multi-channel R/C winner. The first reel stunt type R/C model. Wing span 72". Wing area 864 sq. in. Recommended engine: Veco ".35 RC"



$19.95

NEW Veco .35 RC

Has power you need for top R/C performance. Equipped with throttle for servo or escapement operation, adjustable stop for idle setting. YCC

Veco FUEL LINE TUBING

Veco WHEELS

3/8" to 4 1/2" Dia.

Largest selection of rugged, lightweight, die cast hub wheels, inflatable, semi-pneumatic, sponge or hard rubber tires.

TUGBOAT 35

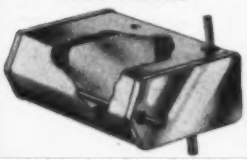
$24.95

Ocean going type designed specially for radio control. 35" formed styrene hull, parts. Die cut plywood planked deck, all metal fittings. Ready to assemble.

TUGBOAT 27 $18.95

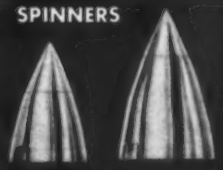
Harbor type for expertly engineered for multi- or single channel R/C. Of plywood, styrene hull, formed pilot & deckhouse, all metal fitting provided

FUEL TANKS



Square wedge designs, built-in baffles assure fuel flow to engine regardless of maneuvers. Precision built, inside soldered. Guaranteed against leaks. 1-7 oz. cap.

SPINNERS



Hand-spun aluminum for maximum strength and lightness, perfectly balanced. Mounts on crankshaft 1- to 2- diameter

VECO PRODUCTS ARE SOLD BY LEADING HOBBY DEALERS EVERYWHERE...VECO PRODUCTS CORP., BURBANK, CALIF.

WYLAM PLANS

EIGHT 14 x 20 IN. PLATES TO EACH SET!

For the first time in sets—YOU asked for them! Now available!

Set # W-1
- SOPWITH CAMEL — Famed WW-1 English pursuit
- WRIGHT MODEL A — A true pioneer—a gem!
- WRIGHT MODEL B — Another collector's item
- SE-5A — WW-1 pursuit—a favorite

Set # W-2
- SPAD S-XIII C.1 — Renowned WW-1 French pursuit
- CURTISS MODEL A — A competitor of the Wrights
- SPAD S-VII — Great French WW-1 pursuit
- WRIGHT FLIER — Man's first flyable plane

Set # W-3
- CURTISS P-1 HAWKS — Glamorous Army fighters
- F11C-2 GOSHAWK — Navy carrier fighter
- P-6E HAWK — Greatest of all the Hawks!

Set # W-4
- REPUBLIC P-47D — The wonderful Thunderbolt
- SPITFIRE 2 — Battle of Britain hero
- MESSERSCHMITT Me-109J — WW-2 German fighter
- CURTISS P-40D — American WW-2 Warbird

MODEL AIRPLANE NEWS
551 Fifth Ave., New York 17

For over 20 years, William Wylam has been an acknowledged master of the detailed drawings of historically famous airplanes. MAN is happy to comply with the many requests for Wylam plans by making available this selection.

EACH SET . . . . $1.00 ALL FOUR $3.50

Enclosed is _____ for plan sets numbered in boxes below

Please print your number DISTINCTLY in box for each plan you desire.

PLAN SET #	PLAN SET #	PLAN SET #	PLAN SET #

NO STAMPS PLEASE

NAME PLEASE PRINT

ADDRESS

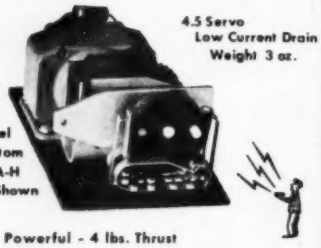
CITY ZONE STATE

NEW!

PROPORTIONAL ACTUATORS

For Planes & Boats

NON CRITICAL NEUTRAL
VERNIER TRIM • • • • • •
FOLLOWS STICK • • • • •



- Powerful - 4 lbs. Thrust
- Non Jamming Cam Drive • Nylon Gears
- Model Custom PA-H Horiz. Power Arm
- Model Custom PA-V Vert. Power Arm

NOW ONLY $17.95

Write Today for Descriptive Literature

CUSTOM-BUILT PRODUCTS FOR THE DISCRIMINATING MODELER

TOMOSER ELECTRONICS & MFG. CO.
217 Vulcan St. Buffalo 7, N. Y.

- sticks in seconds
- holds forever
- glues everything
- waterproof
- transparent
- non-staining
- heat-resistant
- fuel-resistant

25c
49c
$1.49

CHAMPIONS CHOOSE

UHU® GLUE

FOR WINNING MODELS

don't say glue . . . say "Yoo-Hoo"

Get UHU Today

At your hobby shop or write to:
UHU Products Corp.,
820 Greenwich St., New York 14, N. Y.

Canadian dealers please contact
Model Craft Hobbies, Ltd.,
66 Wellington St., W., Toronto, Ont.

or write to
UHU Products (Canada) Ltd.,
28 Wellington St., W., Toronto, Ont.

to complete their Schneider Cup racers as yet. However we are working to round out our collection so as to have a complete historical group with all the winners and the other interesting planes included. Then we can present a complete flying historical parade of seaplane racing, from the 80 mph Tabloid, to the Supermarine S-6B which retired the Trophy in 1932 and then became the first plane in the world to fly over 400 mph.

The FAST Club has found the Schneider Cup seaplane racers to be one of the finest types of model flying for fun. We highly recommend them for a club activity or to individuals who want to enjoy something different in historic scale modeling.

Men and Ships

(*Continued from page* 12)

Bell's chief design engineer, at a meeting with Major Ezra Kotcher, a project officer at Wright Field. Kotcher revealed that a 6,000 lb. s.t. turborocket was under development by one of the engine companies which would provide the needed power, and Woods returned to his firm to persuade Larry Bell to start the 800 mph MX-524 project, later amended to MX-653.

This design finally shook down as a simple man-carrying rocket-powered aircraft —the turborocket would not have been ready in time—with straight wings and an orthodox structure, but with quite extraordinary strength factors of around 18g positive and 10g negative. Air launching and skid landing gear were considered, but possible military applications if the design were successful, dictated a conventional tricycle landing gear. It was thought that wing wake interference over the tail would present one of the biggest problems of transonic flight, and therefore the tail was placed fairly high on the fin and made readily adjustable to counteract trim changes.

The power unit was a Reaction Motors RMI-6000C4 rocket engine having four tubes each of 1,500 lb. s.t. operating at a chamber pressure of about 230 lb. sq. in. The unit could not be throttled, and so power was varied by burning one, two, three, or all four tubes.

Choice of propellants fell on liquid oxygen and alcohol; both were easily obtainable, had good power potential, were not spontaneously combustible, and were relatively safe to handle by groundcrews. Design of a complicated turbine driven pump threatened to delay the program, so initially a system of pressurizing the propellant tanks from an array of compressed nitrogen bottles was employed. Appropriately regulated, the nitrogen also raised and lowered the undercarriage and flaps, drove the gyros for the flight instruments, actuated the tailplane screw jack, and topped up cabin pressure. The nitrogen system put up the weight by 2,000 lb. and reduced endurance by over 1⅛ minutes but prevented delay in the start of first flight tests.

To preserve the bullet shape of the forward fuselage, the cockpit canopy was actually part of the fuselage decking. Plexiglas, used to avoid difficulties in producing double-curvature plate glass, later encountered trouble with aerodynamic heating, and in the X-1A redesign a conventional canopy with plate glass screen was substituted.

The cockpit was pressurized only to about 3 lb. sq. in. above atmosphere to minimize injury to the pilot if the cockpit were punctured.

The end of the war made available a B-29 for the air launching that Bell engineers had originally envisaged. The B-29 could take the plane up to operating altitude, conserving the rocket fuel supply and avoiding the dangers of a take-off at a 100-lb. sq. ft. wing loading. Bomb doors and part of the belly of the B-29 were cut away and the X-1 suspended beneath from a standard bomb shackle.

Air tests had to be made first to see whether the X-1 would separate cleanly from the mother ship. Pressure surveys using the X-1's port wing pressure orifices were carried out and it seemed that a positive separating force did exist, but to make sure, guide and ejection gear was evolved to aid separation.

In February 1946 the first drop and glide tests were made by Jack Woolams. Muroc Dry Lake was flooded at this time of year, and so Pinecastle, Fla., was the site chosen. The engineless X-1 was launched on its first flight at about 27,000 ft., glided to the ground in twelve minutes, and landed at about 110 mph. Ten glide flights were made at Pinecastle, followed by four more at Muroc, where test facilities meantime had been prepared. Then, on December 9, 1946, in perfect weather, the X-1 was launched at 27,000 ft. for its first powered flight, when it reached Mach 0.79 piloted by Chalmers S. Goodlin. Bell pilots Goodlin and "Tex" Johnson took the plane to over Mach. 0.8 and pulled 8g before finally handing over the first plane (6602) to the Air Force. The second model, 6603, was eventually given to NACA for supplementary research and piloted in the main by Herbert H. Hoover and Howard C. Lilley. The third model, 6604, was waiting for the turbine driven pump, but on its first flight later was jettisoned from the B-29 and blew up after a mid-air fire.

Responsibility for the Air Force testing of the X-1 was given to the Fighter Test Section at the Flight Test Laboratory, Wright-Patterson AFB. Careful combing of the group of pilots attached to the Section finally isolated an unassuming young officer noted for his emotional stability and precision flying, Captain Charles E. Yeager.

Born February 13th, 1923 at Myra, West Virginia, Yeager joined the Air Force in September 1941. He'd had no special ambition to fly, but the idea being implanted by a friend and encouraged by his father, it soon became the thing he most wanted to do. Commissioned as flight officer in March 1943, he went to England with the 363rd Fighter Squadron in November 1943. On his eighth mission, March 4th 1944, he shot down his first Me 109 and damaged an He 111. On his ninth mission the next day, he had to jump by parachute from his burning plane over Southern

STICK WITH

LEPAGE'S

TRADEMARK

BOTH HOT FUEL-PROOF

Sticks Balsa

Welds Polystyrene

LAFAYETTE RADIO -- RADIO-CONTROL HEADQUARTERS

ONLY 14.95

LAFAYETTE SPECIAL RADIO CONTROL TRANSMITTER

Newly designed, crystal controlled, single channel transmitter is completely assembled tested and guaranteed. Operates on exam-free 27.255 MC R/C band. Includes 27.255 MC crystal, tube and 6-section telescoping antenna. Range approximately 1 mile. Measures 8½" x 2¾" x 1¾" exclusive of antenna. Less Batteries. Shpg. wt., 2½ lbs.

F-249 —R/C TRANSMITTER (Less Batteries).... **14.95**

BATTERIES
3-Burgess U30..... 1.75
1-Burgess 2..... .13

LAFAYETTE SPECIAL R/C RECEIVER

Completely factory wired and tested receiver, extremely sensitive and stable. Completely enclosed—ideal for use around water; case may be removed if desired. Features external fine tuning control, antenna lead, and plug for external power and actuator connections. Requires one 1.5V and one 45V battery whose size depends on size of model. Complete with 354, but less batteries. Size 3" x 2¾" x 1½". Ideal companion to F-249 Transmitter. Shpg. wt., 8 oz.

F-208 —R/C RECEIVER (less Batteries).....Net **8.95**

SPECIAL COMBINATION OFFER

Consists of R/C Transmitter (F-249), and R/C Receiver (F-208)

F-259 — Combination .....Net **22.90**

NEW! 18" CABIN CRUISER

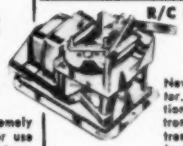
AUTHENTIC - FACTORY ASSEMBLED - READY-TO-RUN

Flashy 18" Cabin Cruiser with molded styrene plastic hull and machine marine fittings. Contains servomechanism and heavy duty screwmotor. Additional below deck space for receiver and batteries. Complete package of boat, motor, servo, F-249 Transmitter and F-208 receiver, less batteries. Shpg. wt., 12 lbs.

F-354 Completely operating Combination Net **42.50**

F-350 Boat with Motor and servo only, less batteries, shpg. wt., 8 lbs. .....Net **22.50**

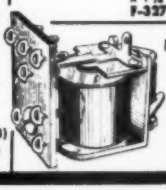
R/C ELECTRIC SERVO MECHANISM



• DESIGNED AND PRICED FOR HOBBYISTS

New, powerful, motor driven R/C actuator. Delivers positive, instantaneous action. Provides selective steering and electronic, automatic return to neutral: Extremely efficient when used with model boats and land vehicles. Only 2½" x 2" x 1¾". Includes instructions and linkage.

F-327 .....Net **4.95**



LITTLE "JEWEL" R/C RELAY

The Mighty Mite of the R/C field. Weighs less than ½ oz.! Only ¾"H x 17/32"W x 1-1/16"L. Highly sensitive—extremely rugged. Pulls at 1.4 Ma—drops out 1.2 Ma D.C. S.P.D.T. 5000 ohm coil.

F-260 .....Net **2.75**

FREE! LAFAYETTE CATALOG

NEW 180 PAGE ELECTRONIC CATALOG FEATURING THE BEST BUYS IN THE BUSINESS

The newest and largest assortment of Electronic, Radio and TV parts, Hi-Fi and Public Address Components and systems, Test Equipment, tubes, Transistor Kits and miniaturized components for transistor circuitry, Ham Equipment, Builders Kits, Tools, Books, Microscopes, Binoculars, Telescopes, Cameras, and Drafting Equipment.—ALL AT LOWEST PRICES—Catering to the economy minded dealer, serviceman, engineer, technician, experimenter and hobbyist. CRAMMED FULL OF MONEY SAVING BUYS. SEND FOR YOUR FREE COPY TODAY.

Lafayette Radio DEPT. MA1 P.O. BOX 511 JAMAICA 31, N.Y.

NAME _____

ADDRESS _____

CITY _____

ZONE _____ STATE _____

SEND FREE CATALOG 305

France, evading capture and being helped towards the Spanish border by French partisans. He won the Bronze Star for helping a wounded comrade across the border, and finally arrived back in England just before D-Day. Getting permission direct from Washington, against all the rules, to rejoin his old unit, Yeager eventually got the Silver Star and Cluster, Distinguished Flying Cross with two clusters, the Purple Heart, and other decorations, in all flew 64 combat missions on Mustangs totalling 270 combat hours, and downed a further 11 enemy aircraft. March 1945 saw him returning to the States, to take a pilot instructor's course at Perrin Field, Texas, followed by a two month period as basic flying instructor there, and then a transfer to the Fighter Test Section.

Yeager made his first X-1 flight in August 1947. The plane was empty of fuel and Lox, the flight being to familiarize him with the plane's handling qualities, and the deadstick landing pattern with its 200-220 mph approach speed. Following two further preliminary glide flights, the machine was fuelled, and Yeager dropped out and began to feel out the motor. On three chambers he climbed to 40,000 ft. and rapidly hit Mach 0.867 before shutting down. His test program was tight and called for a controlled inching forward, each step being checked and double-checked with the recorded instrument data and his Air Force NACA and Bell team-mates. A camera was mounted over his shoulder to snap the dash panel. Instruments in the amidships bay recorded pressure over the surfaces as well as aileron and elevator positions and forces, and a telemetering device transmitted all this data back to the ground.

On the second flight, to Mach 0.89, buffeting was encountered and also a wing drop which needed one-third aileron to correct. On the third flight 0.91 was recorded. On the fourth, at 0.94 the plane could not be turned from its straight path. In the vertical bank ready for the turn, the elevators were powerless at that speed due to shock waves forming over them. So Yeager tried moving the whole horizontal stabilizer on the next flight, and used the same successful technique, too, to cure pitch-up. Conventional elevators were thus proved virtually useless in the transonic region and so a slab or flying tail came to be used on all modern transonic and supersonic aircraft.

On the sixth flight, October 14, 1947, Yeager "kicked it up to about Mach 1.04" —his own laconic words to describe one of the most epoch-making flights since the first powered one of all by the Wrights in 1903.

The ride through to Mach 1.0 was pretty rough at times, and Yeager had some nasty moments during some of the 80 or so flights made on the X-1. The maximum speed reached by the original machines was Mach 1.5, 976 m.p.h. at 46,000 ft., and the best height attained was 70,000 ft., both figures well above those originally envisaged for the project.

Yeager's last X-1 flight on January 5, 1949, was risky as well as spectacular, a ground take-off, judged by Bell engineers to be so dangerous because of the machine's high wing loading and the chance of a power cut near the ground. Averaging a climb rate exceeding 13,000 ft. per min., the X-1 reached 23,000 ft. in 1 min. 40 sec. before the half-load of propellant gave out.

"Chuck" Yeager later flew the revised X-1A on four flights, and on the last "over-

from start to (finest) FINISH

winning modelers use . . .

BOB PALMER
1955 Nationals Open Stunt Champ. 7 times California Open Stunt Winner.

pactra AeroGloss

From the finest *fuel proof* cements that give you strong, sturdy construction, to the final coat of *fuel proof* Dope for a brilliant, trophy winning finish AERO GLOSS products on your workbench assure your model of lasting beauty and protection.

Aero Gloss Fuel Proof Cements
Now—FULL OUNCE 15c
C-77-15 *Strong*
C-15 *Extra Fast Drying*

Aero Gloss Fuel Proof Dope In Jars, Cans and Spray

Winning Modelers in Every Event pactra-fy with AeroGloss
PACTRA CHEMICAL CO. 1213 No. Highland Ave. Los Angeles 38, Calif.

Complete Listing

MODEL AIRPLANE NEWS FULL SIZE PLAN SERVICE

The editor's selection of all time favorites, including completely new combinations of the greatest designs. All types!

PLAN SETS 50c p.p.

50. DUMBO: PBY Scale, U/C, .19's.
FRENCH OLDTIMER: 1914, ½A, FF.
Dumbo, the Catalina, man-sized ukie, takes off, lands on water or ground.

1. GIMLET: RC Low wing .049.
ROYONO: Contest FF A&B.
So low wings RC are new? Gimlet started it all!

2. COMPER SWIFT: ½A, FF, Scale.
MULVIHILL WINNER: Rubber.
THE LIEUTENANT: UC Stunt, .29-.35.
If it's scale- you like, the Swift is a wonder!

3. BUSTER: Rubber, Sport
THIRTEEN: UC Stunt, .29-.35.
VOUGHT SBU-2: UC, Scale, .19-.29.
Buster. Ideal for beginners on way up.

4. SURE FUN: UC Sport, .29-.35
PROFILE SILVAIRE: FF Profile, ½A.
ZEPHYR: Rubber, Fuselage
Control line on floats. Sport Gassie.

6. HIGGINS CABIN CRUISER:
RC Boat, .09-.19.
FOKKER D7: Scale, U/C, .29-.51.
The great all-time favorite? Try the Fokker D-7.

7. WORLD CHAMP GL.: Nordic Winner.
HI BOY: Cabin Stunt, Palmer-Goyet, .29-.35
POW WOW: Bob Palmer stunt, .29-.35
Collector's item—two Palmer models!

8. GEE BEE: Scale U/C, .19-.25.
DRAKE: FF, flying boat, .049.
DURANITA: FF, bipe, .049.
More people built the Drake than any other ship.

9. AEROCOM'DER: Scale, U/C, 2 .15.
MARS: Bob Palmer stunt, .29-.35.
NOBLER: Aldrich's Nats Winner, Stunt, .29-.35. **Palmer and Aldrich, plus a twin ukie. Imagine!**

11. GAMBLER: Mirror Stunt Winner, .29-.35.
DOUGLAS B-66: ducted fan FF, .049.
B-66, the ducted fan job that beats all others.

12. WHIRLING WINGS: Sikorsky XH-5, .15, 'copter.
BREEZY: Small field RC, .049.
SPITFIRE: Stunt, semi-scale, .29-.35.
P. Schoenky, 'copter master-his Sikorsky!

13. T-CRAFT: FF scale, .049.
FENO: Combat, stunt, .29-35.
PADDY'S WAGON: Contest FF, .049.
Paddy's Wagon—one contest job ok for beginner.

14. HEATH PARASOL: RC, FF, Scale, .075 .09.
GUARDIAN: Nats carrier winner, .29's.
SHARPIE: FF Sport, .02-.049.
—Guardian a dilly.

15. RE-8: WW1, U/C. .29-.35.
FLAPPING WINGS: Rubber, ornithopter.
BOOMER: FF, sport, pusher, .049.
Can planes fly like birds? Ornithopter sure does.

16. DRAGGIN: U/C Stunt .049.
BLACKBURN: 1912 Scale FF .049.
ASCENDER: Contest FF .049.
Wind in the wires. Goggles. Oh, that Blackburn.

18. PAACKHORSE: PAA Load FF .15.
AIRNOCKER: Scale, FF .049.
What model hit the jackpot? Airknocker—the Champ.

21. FAST MILER: U/C Proto, .29.
PEE WEE PAL: .02 FF sport.
THE VICTOR: RC, RUD., .15-.19.
The Proto Racer is tops; 1200 flights on Victor.

27. FLAMINGO: RC Amphibion, .15-.23.
UPSTART: Best B-C FF, on .29-.35.
NACA planing hull make Flamingo stand-out RC. UPstart—it goes!

40. MUSTANG: U/C Scale, .29.
BI-GONE: Sport, FF, ½A.
GLIDERS FIVE: HL Sheet.
Mustang, Jim McCroskey's Nats winner. Bi-Gone, nifty bipe.

42. TENDERFOOT: 1/2A, FF, beginner
BIG D: FF, delta, .049-.15.
WESTWIND: RC, 1/2A, low wing.
Three stand-outs—good but different!

43. EQUALIZER: .15 to .19 multi, RC.
QUICKIE TRAINER: Speed, .29.
AMAZOOM: FF, contest, .15.
deBolt's best, the Equalizer? Amazoom—Stan Hill's hi-thrust.

44. CONVAIR'S DELTA: Jetex FF.
LIL DYNAMITE: .15 stunt, UC.
SWAT: ½A, FF, contest.
A trio of exceptional planes.

45. ASTRO-HOG: Multi RC, .29-.35
MITCHELL: Profile, .09's, .15's UC.
Dunn's low wing radio—tops! Nothing matches this multi. The Mitchell a fine flier.

47. FOKKER E-3: 1/2A, FF, Scale.
NAVY RACER: Rubber, semi-scale.
WOODY: .29-.35, UC Combat. Hot!
E-3, beautiful model, fine flier.

48. SPORTCOUPE: .09, U/C, Stunt.
WHATIZIT: .35, Combat, Wooten.
SWIF-F-FT: Jetex, two sizes!
Whatizit, settles fuse-wing debate!

49. CONQUISTADOR: .29-.35, U/C Stunt.
TWO-STAGE ROCKET: Jetex (2).
Stunter is a thing of beauty, and it flies as well as it looks!

NO STAMPS PLEASE **PLAN SETS 50c p.p.**

MODEL AIRPLANE NEWS • 551 FIFTH AVENUE, NEW YORK 17, N. Y.

Enclosed is _____ for plan sets numbered in boxes below

PLAN SET #	PLAN SET #	PLAN SET #	PLAN SET #	PLAN SET #	PLAN SET #

Please print your number DISTINCTLY in box for each plan you desire.

PLAN SET #	PLAN SET #	PLAN SET #	PLAN SET #	PLAN SET #	PLAN SET #

List additional plan orders on separate sheet.

NAME PLEASE PRINT

ADDRESS

CITY ZONE STATE

Limited Supply of Plans Listed Below. Order Early! Check Correct Number on Coupon.

5. Space Tiger, Curtiss Racer, Puss Moth
17. Half Fast, Perdido, Shoreboat
22. Mooney Mite, '55 Rambler, Waco Cabin
23. Humdinger, Old Faithful, Cessna 180
24. Aero Bat, Snoopy, Seagull
26. Corsair, Gyro-Glider, Santanita
27. Flamingo, Upstart
29. Cougar, '55 Nordic Winner, Dizzy Boy
30. Great Lakes Trainer, Triple Threat RC
32. Mig-15, Fifinella, Coquette
33. Skyraider, Dunwoody's Nordic, Flexi-Bull-It
34. Corben Super Ace, Cessna 310, Profile Lightning
38. SE-5, Curtiss Robin, Nobody

stepped his bounds a bit" and hit Mach 2.51, about 1,650 mph, December 12, 1953. He had already received the 1949 Collier's Trophy—with Lawrence D. Bell and NACA's John Stack—for his part in the X-1 project, and the Mackay Trophy for his first supersonic flight. Now he was awarded the Harmon Trophy by the President of the United States and also the Distinguished Service Medal in recognition of his contributions to science.

The time now came for him to resume his normal Air Force career, and on October 3rd, 1954 he was assigned to the 12th Air Force HQ in Germany. Now a Lt. Colonel, Yeager currently is the Commander, First Fighter-Day Squadron, George AFB, California.

The X-1 was finally installed in the National Air Museum, Smithsonian Institution, along with Wright Biplane and the Spirit of St. Louis and "Chuck" Yeager has the same assured place, with the Wrights and Charles Lindbergh, as one of the greatest aviators of this aeronautical age. Dimensions of the original X-1s were: Span, 28 ft.; length, 30 ft. 10.98 in.; height 10 ft. 10.2 in. Wing area was 130 sq. ft. and wing thickness 8% on 6602 and 10% on 6603. Varying figures were given for weights, etc., as modifications were made during the lengthy development and trial period. The following are believed to be approximate for the machine at the time of the great October 14th flight: Empty weight, 6,890 lb. including 526 lb. of test equipment; loaded weight, 13,400 lb.; wing loadings, 103 lb. sq. ft. takeoff, and 55 lb. sq. ft. landing; full power endurance, 2.5 minutes; landing speed usually around 180 mph; flaps up stalling speed 240 mph. The plane was colored a bright orange. *ACKNOWLEDGEMENTS:* Bell Aircraft Corporation; USAF; "Development of the X-1 Supersonic Research Aeroplane" by R. M. Stanley and R. J. Sandstrom; Journal of the Royal Aeronautical Society, December 1956, (Lt. Col. Yeager's address to the Society). Facts checked with "Across the High Frontier" by W. R. Lundgren.

MAN at Work

(*Continued from page* 4)

dollar bill in the register, knowing he would never come back."

Preston is convinced that a boy of nine or 10 can't successfully build a model in the first crack out of the box, that he must be taught to accept a failure, and be guided through that failure into a lifetime customer. Preston encourages the kid to make his choice of category, then tries to keep in contact with him, encouraging him to bring in his model, and even to be there when he flies it. Sure it takes time. But it makes a modeler and a customer.

Radio is too big, thinks Preston. Hobby shop owners cannot service all the equipment. Modelers come in with inoperative equipment, rundown batteries the cause, because someone not handling meters might have said that it wasn't necessary to check batteries. This is like the supermarket telling you they don't manufacture potatoes no more.

Some hobby shops can't give you a complete line of U-control equipment. Motors? Yes. Planes? Yes. Mounting bolts? Fuel line? Washers? Proper sized bellcranks? Maybe. Clerk in one shop we heard of didn't know what a servo was, asked the manager who informed the customer "nobody uses servos in R/C around here."

MAN doesn't think that every hobby shop owner must, of necessity, take his tired bunions to a dusty flying field. Or that he should be an airplane-only man. He could learn which side his bread is buttered on, and the wholesalers should not stand in the way of his finding out. Will gladly settle for obtaining what we ask for, when we ask for it.

► R.E.P. on page, 30: From December 20 issue, the Aeroplane (England), ". . . M. Robert Esnault-Pelterie, French aeronautical engineer responsible for the R.E.P. monoplanes of the 1910 period, died at Nice, December 6. He learned to fly in 1906, is usually credited with the first tractor monoplane design, with building the first radial aero-engine with an odd number of cylinders, and with inventing the single control column. The Vicker's company's first production was an R.E.P. monoplane built under license."

Airplanes of the World: "Esnault-Pelterie introduced all-metal air frames, cantilever, internally braced wings, radial air-cooled engines, the stick control system, and tandem-wheel landing gear." . . . August 24, Ninth Annual Free Flight Scale Meet, Inglewood Flight Masters. One of the few of its kind, this meet is nationally famous for the high caliber of interesting crates of all vintages that vie for trophies and special awards for ducted fans, biplanes, unusual entries.

► Vancouver Gas Model Club (British Columbia, Can.) puts on a whale of a contest over the Labor Day weekend (AMA cards welcome). Buck entry fee, four bits an event. One day (Sunday) control-line, the next free flight. Stunt, Rat, Proto, Combat, Balloon Busting, Flight Plan; Rudder-Only; HL Glider; ½A, ABC combo, Jetex, Towline. Free booklet, Mrs. G.A. Holm, 1552 E. Pender, Vancouver 6. . . . New club, DaWa Spar Benders (Danville and Wayland, N.Y.), 18 members. Contact Harold Kiesl, Jr., 12 Water Street, Wayland. Club specializes model planes. But, of course! . . . Marquardt Aircraft Co., selected one of top ten plants in country, by editors of "Factory." Roy's the big ramjet man. Remember him flying free flight at prewar Detroit Nats. Elliptical dihedral. His crates, that is . . . Testor ukie kit wood parts are supplied by Puerto Rico factory, other parts by Dura-matic plant, packed and shipped from Culver City, Calif. Testor has two Rockford, Ill., plants. Industry has come a long ways since the two-solids-for-nickel days! . . . Fox's new plant is 180 x 240 feet. Real airplane factories have been smaller! Duke's .15 is the latest . . . touching, fine letter from Tony Alvarado, Cuba. Local modelers stood in silence for 30 seconds in respect to the late, and great, Jim Walker.

► For info on contest calendar join the AMA and receive the monthly list. So many contests now that MAN would have to eliminate two articles a month for calendar. limited to next 45 days only! . . . stacks of mail on revising the Nats. Let's look over the 1958 tent meeting first . . . joined the great Lorenz and local buddies in RC session. Poor guys have limitless field, in valley, make lazy launches down hill side.

► No great models anymore. Rules don't encourage real design effort. In free flight you luck out. Modern pylon gassie is not a model under power. It is a missile. The guidance is preset to blast off in a more or less circular, climbing pattern—it becomes a glider when the engine cuts. Thus, the missile-glider. The AF dream of skip-gliding through the atmosphere is old stuff to us! Greatest model (rubber) we ever saw, Jim Cahill's Clodhopper. In mid-thirties, had planked, streamlined fuselage, short gear, a folding one-blader, tensioner, hollow spars in wing and stab. You had to beat the other guy in those days.

ADVERTISING INDEX—SEPT., 1958

Ace Products	38
Ace Radio Control	35
Adran Co.	2
American Telasco, Ltd.	54, 55
America's Hobby Center	6, 7, 8
Annco Engineering Co.	38
B & F Mfg. Co.	52
Berkeley Models, Inc.	62, 63, 64, 4th cover
Bonner Specialties	52
Broadfield Air-Models	40
CG Electronics Corp.	49
Citizen-Ship Radio Corp.	46
Comet Model Hobbycraft, Inc.	1
Consolidated Model Engineering Co.	2
L.M. Cox Mfg. Co.	37
Craft, Model & Hobby Industry	39, 54
Dealers Hobby Supply	52
The deBolt Model Engineering Co.	44
E S S C O	45
Enterprise Model Aircraft Co.	31
Fox Manufacturing Co.	3rd cover
Francisco Laboratories	2nd cover
Carl Goldberg Models, Inc.	39
Grish Bros.	46
Paul K. Guillow, Inc.	3
Gull Model Airplane Co.	53
Herkimer Tool & Model Works	5
Holland Engineering Co.	38
Jaico Products	54
K & B Allyn Co.	41
Kap-Pak Products, Inc.	44
Lafayette Radio	59
LePage's, Inc.	58
Lindberg Products, Inc.	45
The Robert R. Longo Co., Inc.	34
McCord Precision Products	49
Modelcraft	40
Modelhobby	38
Monogram Models, Inc.	55
National Model Distributors, Inc.	61
Pactra Chemical Co., Inc.	59
Pan American World Airways System	48
Perfect Products Co.	39, 45, 52
Pittman Electrical Developments, Inc.	52
Polk's Model Craft Hobbies	36, 55
Scientific Model Airplane Co.	50, 51
Sterling Models	42, 43
Stewart/Lundahl Co.	53
Sullivan Products	56
The Testor Corporation	32, 33
Tomoser Electronics & Mfg. Co.	58
Top Flite Models, Inc.	47
UHU Products Corp.	58
Veco Products Corp.	57
World Engines	56
World Hobby Center	52
X-Acto, Inc.	48

Looking for a Hobby?

You'll find it in this fabulous New Edition of

MODELBUILDERS' HOBBYCRAFT Cyclopedia

Only "book" of its kind ever published!

- 14 Sections
- Hundreds of Hobbies
- Thousands of Items
- Printed in Colors
- Many Helpful Hints
- Over 265 Pages (9½x11")
- Cross Reference Index to Each Section
- Profusely Illustrated
- Names of Manufacturers Shown
- Illustrated "How To Make" Ideas

Includes Planes

Cyclopedia of Hobbies for every member of the family — men, women, boys and girls — at your Hobby Dealers—priced at only $1.00.

national MODEL DISTRIBUTORS
2516 N. Greenview Ave., Chicago 14, Ill.
13530 Conant Avenue, Detroit 12, Mich.

Berkeley's

CHAMPIONSHIP "1/2 A" FLYING SCALE

1" = 1' Scale . . . For Free-Flight . . . Controline . . . or Rubber Power!
For .035 to .049 Engines Free-Flight . . . .049 to .099 Engines Controline (except as noted)

"WACO CABIN"

For ½A Free-Flight — Controline 1" Scale — 35" Wingspan

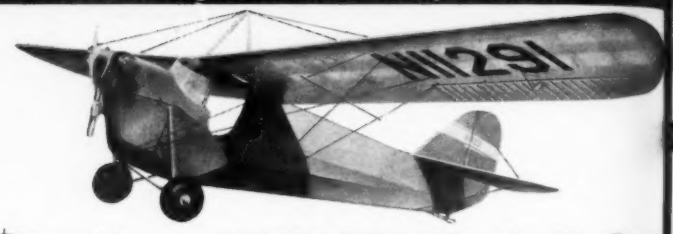
For "½A" Engines — .035 to .074

An unusual addition to our line of 1" Scale Championship designs. The "Waco" is easy to adjust and an unusually stable and high performance craft. As a Controline, its scale appearance and perfect proportions team up to make a fine flyer for everyday or Contest Flying Scale events.

Kit No: 4-13

$3.95

less wheelpant material



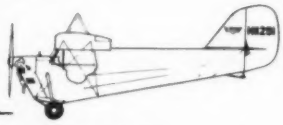
AERONCA "C-3"

For ½A Free-Flight — Controline 1" Scale — 36" Wingspan

.020 to .051 Engines

This kit now joins other Berkeley 1" Flying Scale designs, a series which has won this event at the Nationals consecutively since 1938. Structurally simple, the "C-3" can be assembled and flown in a few days time. Flies well with high or low power free-flight or controline. Plans show both types.

Kit No. 4-12 **$2.50**



- Authentic Multi-color Decals
- Formed Gear, Rubber Wheels
- Die-Cut Balsa and Plywood Parts
- Metal Hardware and Covering Material
- Full Size Berkeley Detailed Plans!

$2.50

Kit No. 4-3

CESSNA L-19 "BIRD DOG"

36" Wingspan

Two seat observation plane used on a large scale in Korean War by the U.S. Army and the U.S. Marines. A large number of these are used by National Guard units. Powered by 213 h.p. Continental—130 m.p.h.

Kit No. 4-1 **$2.95**

PIPER "SUPER CRUISER"

35" Wingspan **$2.95** Kit No. 4-9

Three place cabin monoplane originally introduced as the "Cruiser" in 1940 with 75 h.p. then as the "Super Cruiser" after World War II, with 104 h.p. and then in 1948 as the four place "Family Cruiser". "Super Cruiser" had a maximum speed of 115 m.p.h.

STINSON SENTINEL "L-5"

33½" Wingspan

Two place liaison and observation plane first flew in 1941. 1731 L-5's were built during World War II. Still in use by the U.S.A.F., Italian Air Force, and the Japanese Air Defense Force. Powered by 190 h.p. Lycoming. Maximum—129 m.p.h.—112 m.p.h. Cruise.

CESSNA "180"

35" Wingspan

Four place cabin monoplane introduced in 1953 using the same wing as the "170" but with a re-designed fuselage and tail unit. Powered by a 225 h.p. Continental Engine. Maximum speed is 165 m.p.h.

$2.95 Kit No. 4-7

FAIRCHILD 24 "RANCHER"

36½" Wingspan

First produced in 1933 as a two-seater, in 1938 was introduced as a four place model using either a radial Warner engine or an in-line Ranger. Military version was known as the YC-61 "Forwarder" by the U.S.A.F. and the "Argus" by the R.A.F. Production resumed for business use after the war. 133 m.p.h.

Kit No. 4-5 **$2.50**

"AERONCA SEDAN"

34" Wingspan

Featured as a landplane, plans show pontoon details for those desiring the added thrill of water take-offs. Finished model is really spectacular

$2.50 Kit No. 4-8

"SUPER CADET"

35" Wingspan

Known as the "Interstate Cadet" before World War II and currently built by Cell Aircraft Co. Two place—power was 65 h.p. It is now stepped up to 125 h.p. with an increase in maximum speed to 135 m.p.h.

Kit No. 4-6 **$2.95**

$2.50

Kit No. 4-2

STINSON VOYAGER "150"

.34" Wingspan

Originally built by Stinson division of Consolidated Vultee. Added to the Piper line in 1948. Four place 160 h.p. Franklin engine. 145 m.p.h. maximum speed.

COLONIAL "SKIMMER"

(Not for Rubber Power) 33½" Wingspan

The hull design is perfect for realistic water take-offs.

Three place amphibian with retractable landing gear. Nose wheel protrudes when retracted to serve as a bumper. Powered by 125 h.p. Lycoming, 125 m.p.h.

Kit No. 4-7 **$3.50**

Since 1938—Leader in Quality Model Kits

BERKELEY MODELS INC.,
WEST HEMPSTEAD, NEW YORK, U.S.A.

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. MA., West Hempstead, N. Y. Please include 25¢ packing & postage.

"BUHL PUP"

1¼" Scale — 37½" Wingspan

Kit No. 4-10 **$3.50**

The "Buhl Pups" have been immortalized as one of the finest light planes ever designed. A number of full scale "Buhl Pups" are being rebuilt by "old timers". This truly different design makes an exceptionally realistic and fine flying model.

Each year from all over North America the top Scale Model Builders come to the Nationals to fly in the exacting Flying Scale Events where models are judged for workmanship, authenticity and most of all flying performance! Against this keenest of competition Berkeley 1" Flying Scale designs have won 1st or 2nd in this event

at every Nationals' for the last 18 years!

We are proud of that extraordinary record

Berkeley's DELUXE SCALE Controlines

WORLD'S FINEST KITS FOR THE BETTER MODEL BUILDERS

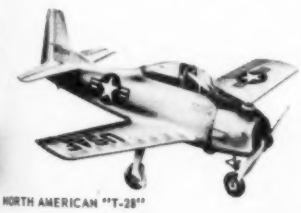
In Berkeley Kits you get the "extra": extra detail on the plans and decals; - extra hardware found only in Berkeley kits; - extra precision in engineering and structure; - and above all that, is the extra fly-ability that has made Berkeley World famous.

REPUBLIC "P-47 THUNDERBOLT"

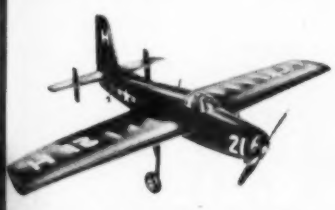
CURTISS "GOSHAWK" F11C-2

CURTISS SBC-3 "HELLDIVER"

GRUMMAN "F-8-F BEARCAT"



NORTH AMERICAN "T-28"



GRUMMAN "GUARDIAN"

NORTH AMERICAN "AT-6 TEXAN"

(*) These kits feature Berkeley's Rounded-Edge Balsa Planking for easier "solid appearance" construction.

Since 1934—Leader in Creative Model Kits...

BERKELEY MODELS INC.

WEST HEMPSTEAD, NEW YORK, U.S.A.

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. MA., West Hempstead, N.Y. Please include 25¢ packing & postage.

- **CURTISS SBC-3 "HELLDIVER"** $5.95
  For .09 to .29 Engines – 25-1/2" Wingspan
  Metal Ring Cowl, operating flaps, rounded edge planking

CURTISS "GOSHAWK" F11C-2 $4.95
For .074 to .15 Engines – 23-1/4" Wingspan
Metal Ring Cowl, Metal Wing Struts, Plastic Dummy Engine

GRUMMAN "F-8-F BEARCAT" $5.95
For .09 to .19 Engines – 26-1/4" Wingspan
A new kit design throughout. Rounded edge planking

North American "T-28" $6.95
For .23 to .36 Engines – 30" Wingspan
Metal Cowl; Tricycle Gear; Step Keel Alignment

Grumman "GUARDIAN" Semi-Scale $7.95
For .19 to .36 Engines – 53" Wingspan
Metal Cowl; Designed for Stunt and Navy Carrier

North American "AT-6 TEXAN" $4.95
For .19 to .33 Engines – 31" Wingspan
Metal Cowl; Embossed Canopy; Army and Navy Decals

Curtiss HAWK "P-6E" $4.95
For .09 to .15 Engines – 24" Wingspan
Metal Cowl; Metal Wheel Pants; Colorful Decals

"P-40 WARHAWK" Semi-Scale $6.95
For .19 to .35 Engines – 45" Wingspan
Metal Cowl; Stunt Flaps; Flying Tiger Decals

"SHOESTRING" $5.95
For .14 to .36 Engines – 28" Wingspan
Metal Cowls; Spinner; Wheel Pants; Landing Gear

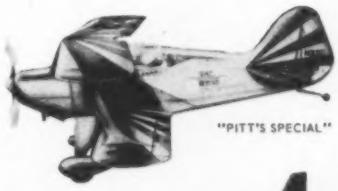
CESSNA "195" $5.95
36" Wingspan—For .19 to .49 Engines
Metal Cowl, "Step-Keel Fuselage" construction

Beech "T-34A MENTOR" $5.95
For .14 to .29 Engines – 33" Wingspan
Air Force Trainer, excellent flyer, easy to build

"MINNOW" Cosmic Wind $5.95
For .09 to .36 Engines – 28" Wingspan
Metal Cowls; Spinner; Wheel Pants; Step-Keel

"PITT'S SPECIAL" $5.95
For .19 to .33 Engines – 25" Wingspan
Metal Cowl; Metal Wheel Pants; Decal Flare Design

- **Republic "P-47 THUNDERBOLT"** $5.95
  For .15 to .29 Engines– 32¾" Wingspan
  A new design throughout. Rounded edge planking

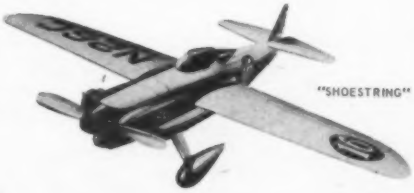


"PITT'S SPECIAL"

"MINNOW"

BEECH T-34A "MENTOR"

CESSNA "195"



"SHOESTRING"

CURTISS HAWK "P-6E"

"P-40 WARHAWK"

Berkeley's "MODEL OF THE MONTH"

• Full Size Plans with both Radio Control and Controline installation details

Newest King Size Model...

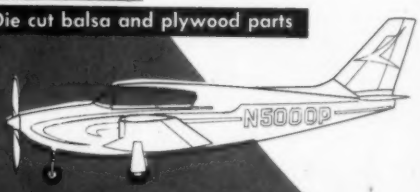
Piper Aircraft's latest four-place personal airplane is an ideal design for low-wing radio control and controline flying. The kit model is ruggedly designed and adaptable to a number of model engines. Easy to build and fly too!

• Tapered Balsa Trailing Edges

• Formed Landing Gear

$7.95
KIT NO. 3-9

• Die cut balsa and plywood parts



PIPER "COMANCHE"

For .065 to .15 Engines — Radio Control 34" Wingspan — 1-1/2" Scale For .09 to .19 Engines — Controline

For Radio Control — Free-Flight — Controline

• Silkspan Covering

• Hardware

• Die cut Celluloid Windshield

Since 1933—Leader in Creative Model Kits

BERKELEY MODELS INC.
WEST HEMPSTEAD, NEW YORK, U.S.A.

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. MA West Hempstead, N. Y. Please include 25¢ packing & postage.

Announcing . . . the ALL NEW FOX 15 for 1958

ONLY $6.95

Never before has FOX manufactured a 15 . . . but now after two years of producing and testing experimental models, the ALL NEW FOX 15 is waiting for you at your favorite hobby shop.

To prepare for the production of this new FOX 15, the company has moved into its new factory with approximately 43,000 feet of floor space. New machines have been purchased and operators have been re-trained for work on this model. Everything has been done to facilitate the manufacture of a FOX 15 of superior precision and operation. Initial tests indicate the new FOX 15 will almost equal the 19's in performance.

SPECIFICATIONS

BORE: 590 STROKE: 530 WEIGHT: 4 oz.

RPM: 14,000 with 8" diameter, 4" prop.

1. HARDENED AND GROUND CRANK SHAFT
2. ⅜" DIAMETER MAIN BEARING
3. LEADED STEEL CYLINDER—GROUND, HONED AND LAPPED
4. FOX QUALITY THROUGH AND THROUGH

The New FOX 15 is not just a new motor; but an entirely new concept of motor design, performance and value. It brings big motor performance within the financial reach of the beginner. The New FOX 15 is unique in construction, unique in design, unique in value and in ability. Try one and see for yourself.

With the New FOX 15, you get a motor powerful enough to fly kits designed for larger motors at a cost only slightly more than the average half A. Never before could a modeler enjoy so much big engine performance so inexpensively.

OUR PREDICTION: In the years to come, this motor will become the standard of the Sport Flying World.

ORDER YOUR NEW FOX 15 MOTOR RIGHT AWAY—

YOU'LL BE GLAD YOU DID

SMART CHAMPIONS CHOOSE FOX

FOX MANUFACTURING CO., INC.

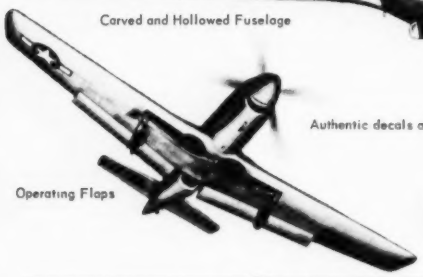
Designers and Manufacturers of the World's Finest Model Airplane Motors

5305 TOWSON AVENUE, FORT SMITH, ARKANSAS

MAKE BUILDING EASIER

Berkeley CARVED FUSELAGE Controliners*

Carved and Hollowed Fuselage Halves or Sections as required
Carved and Hollowed Engine Nacelles as required
Typical Formed Celluloid Canopy
SBD "DAUNTLESS" illustrated
Formed Metal Ring Cowls where required

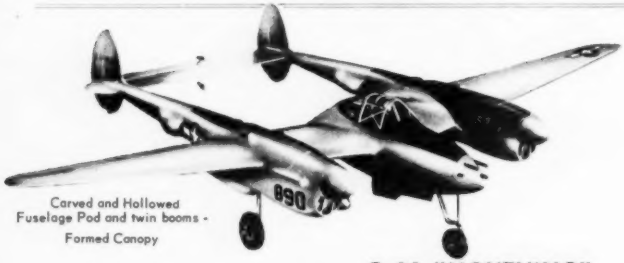


A NEW DESIGN ...100% NEW!

P-51 "MUSTANG" $8.95

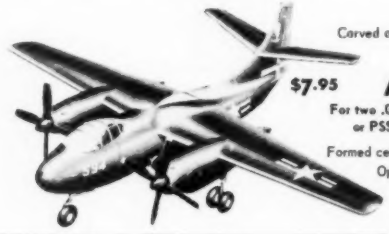
For .15 to .29 Engines — ¾" Scale — 28" Wingspan

A complete re-design of this famous controline. This is a new kit throughout. Features a completely carved fuselage.



P-38 "LIGHTNING" $10.95

For .14 to .36 Engines - 3/4" Scale - 41" Wingspan



AJ-1 "SAVAGE" $7.95

For two .045 to .099 Engines plus Jetex "15" or PSST-"50" (optional) 27" Wingspan

Formed celluloid Embossed Canopy, 5 Wh
Optional scale jet assist power

Carved and Hollowed Fuselage and Engine Nacelles -
Optional shock mounted retractable gear, operating flaps.
Formed Celluloid Nose, Cabin and Turrets -

B-25 "MITCHELL" $14.95

For .09 to .19 Engines - 5/8" Scale - Big 42" Wingspan

"AERO-COMMANDER" $10.95

For Two .049 to .099 Engines—33" Wingspan—¾" Scale

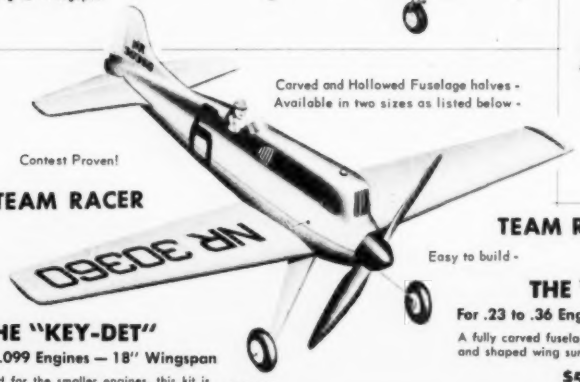
Scale detail from Pres. Eisenhower's "Aero-Commander"

An easy to build unusually beautiful tw
Carved and Hollowed Fuselage Nacelle

SBD "DAUNTLESS" $7.95

For .14 to .36 Engines—31" Wingspan—¾" Scale

Formed Canopy - Carved and Hollowed Fuselage



THE "KEY-DET" $2.95

.074 to .099 Engines — 18" Wingspan

Designed for the smaller engines, this kit is pre-fabricated in same manner as the "Key."

TEAM RACER

Easy to build -

THE "KEY" $5.95

For .23 to .36 Engines — 29" Wingspan

A fully carved fuselage, all metal landing gear and shaped wing surfaces simplify construction

Since 1933—Leader in Creative Model Kits

BERKELEY MODELS INC.
WEST HEMPSTEAD, NEW YORK, U.S.A.

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. MA., West Hempstead, N. Y. Please include 25¢ packing & postage.